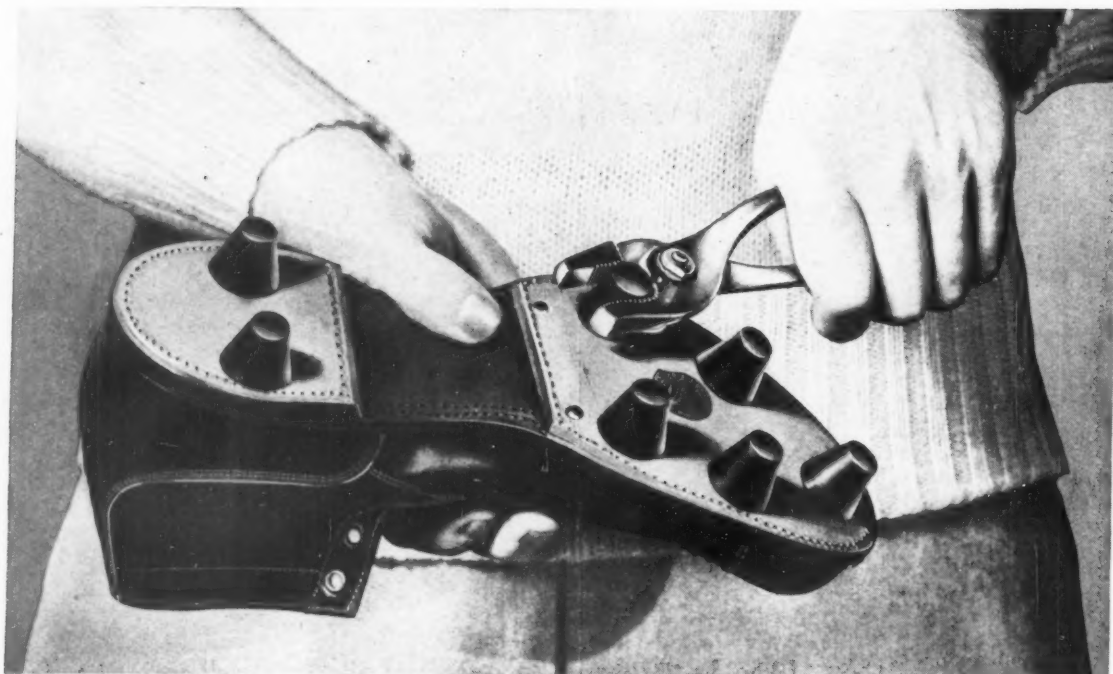


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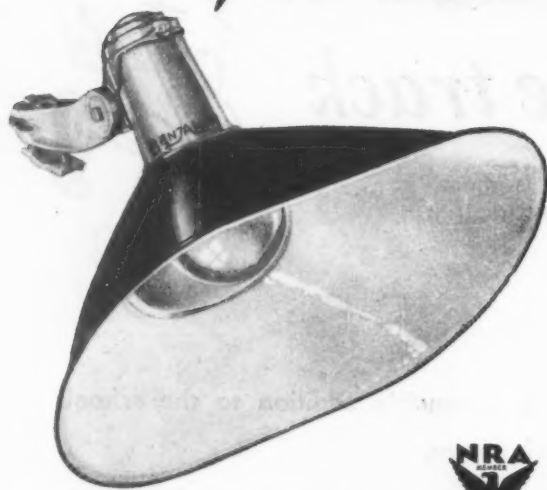
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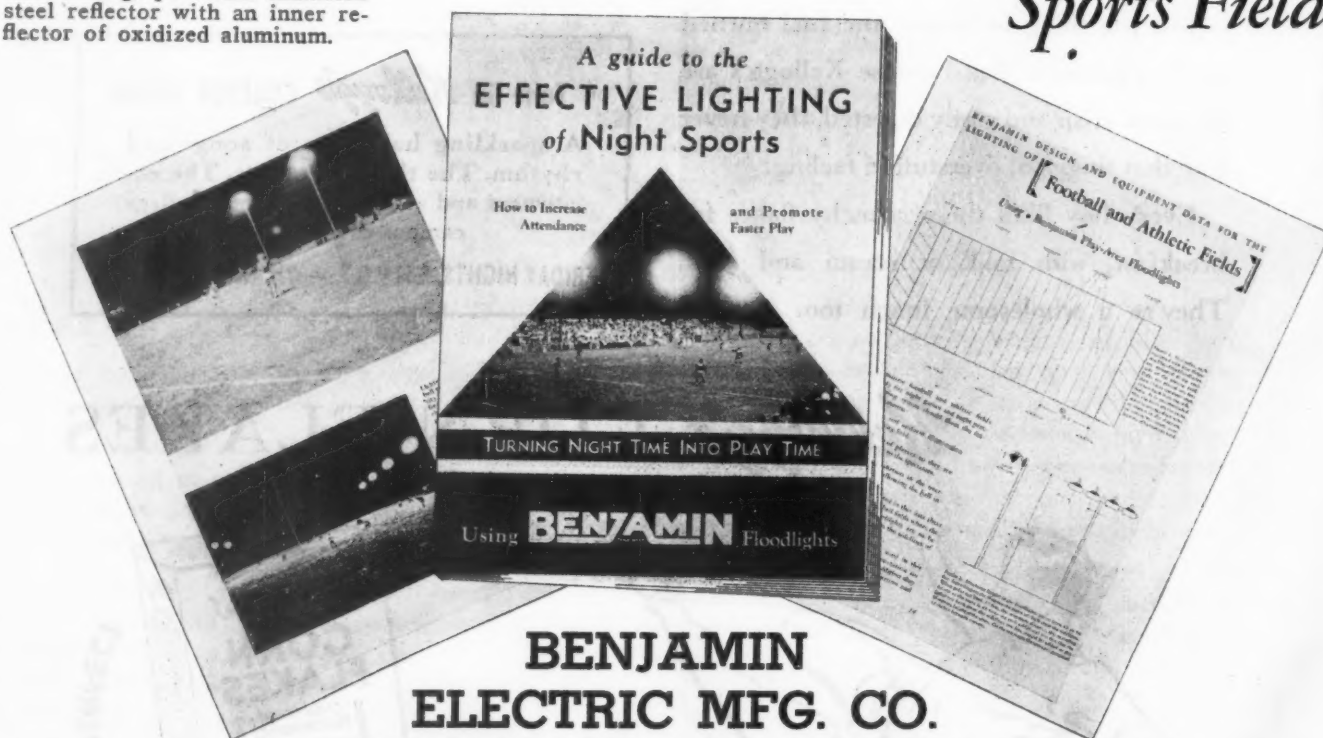


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JACK LIPPERT, Editor OWEN REED, Associate Editor

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THE BALL AND CHAIN 100-YD.

HANDICAP

Do you remember the enthusiasm of his time for the record-setter . . . how every one prophesied: "Here is the fastest speed that man can attain, we have reached the end of new records?" And do you remember the excitement when yesterday a new star set up a new record, displayed a speed 'til then thought impossible?

Yet the chances are that new stars actually can't run any faster than the old ones. The old stars ran with ball-and-chain handicaps, and faster times have been made possible by the removal of some of these handicaps—by the discovery of a new form, acquisition of a new style, by improvement in the mechanical condition of the tracks, in better rolled and faster surfaces.

Kangaroo leather has helped the Stars. For running with extra ounces on the feet, is like running with a ball and chain tied around the ankle. Kangaroo, with its extra strength, has made it possible to glove feet safely in lighter, and lighter weights of leather.



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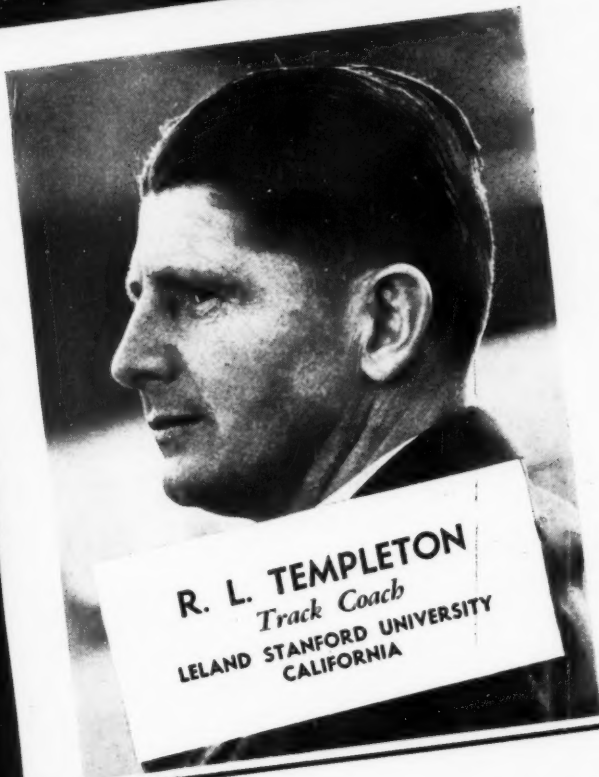
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BULLETIN



R. L. TEMPLETON
Track Coach
LELAND STANFORD UNIVERSITY
CALIFORNIA



COACH TEMPLETON'S TRAINING RULES ON SLEEP

1. Nothing else in training is as important as securing plenty of sleep and rest.
2. A high school athlete needs from 8 to 10 hours sleep.
3. Keep your sleeping room cool—and quiet. Open the windows wide.
4. Sleep on a fairly firm mattress and box springs, that do not allow the body to sink too deeply.
5. For sleeplessness get at the cause; do not take sleeping potions. Eating too much heavy food or over eating immediately before going to bed may be the cause.
6. Ample food and rest makes for recuperation and restoration after mental and physical activity has worn down the body.
7. During the season of actual competition forego dances and other social activities that are conducive to late hours and physical and emotional stress.
8. Practice relaxation to relieve the emotional excitement common among athletes before a game. Stretch out on the locker room bench and close your eyes.

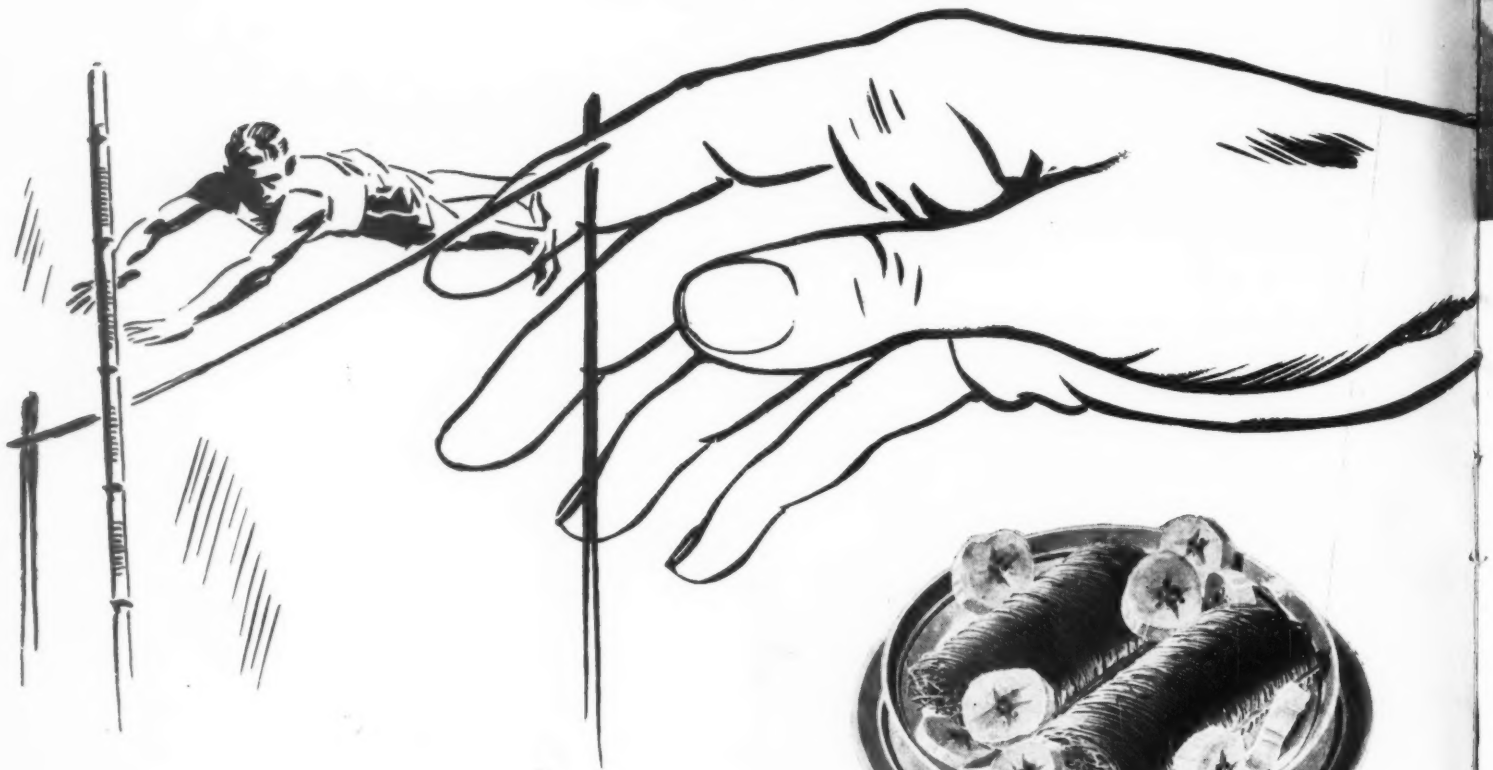


EAT SHREDDED WHEAT FOR HEALTH AND ENERGY

One of a series of posters issued
in the interest of good health by

SHREDDED WHEAT

Coach—HAND HIM A START THAT LASTS—

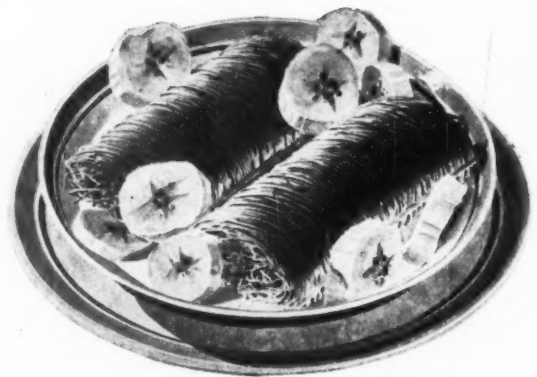


At the very beginning of the season hundreds of coaches hand their squads the habit of eating Shredded Wheat daily. It starts the day off right—it's a start that lasts.

Because Shredded Wheat contains a natural balance of the vital health elements!

Shredded Wheat is whole wheat—nothing added, nothing taken away. It supplies just the right proportion of mineral salts, calcium, carbohydrates, proteins, vitamins, phosphorus, iron and bran. These elements build bone, tissue and muscle—they help tone the system.

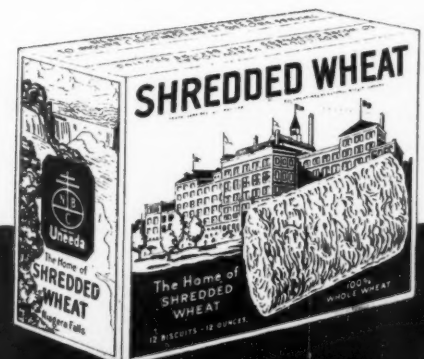
Recommend a daily breakfast of crisp, chewy, Shredded Wheat. You can depend upon it for producing lasting stamina and quick energy.



SHREDDED WHEAT



NATIONAL BISCUIT COMPANY
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ON THE OTHER SIDE OF THIS PAGE IS A POSTER FOR YOUR BULLETIN BOARD. IF YOU'D LIKE EXTRA COPIES FREE FOR GYM AND ASSEMBLY HALL BULLETIN BOARDS, SEND A POSTCARD TO NATIONAL BISCUIT COMPANY, EDUCATIONAL DEPT., 449 W. 14th ST., NEW YORK CITY.

HERE BELOW



WE wish to remark that the above picture of Bitsy Grant hook-sliding or hurdling across the tennis court has more to it than appears on the surface. The point, about which we shall attempt to moralize in a moment, is that Bitsy made the shot! It was during his five-set match with Donald Budge in the U.S. singles championship last year. If you are familiar with Grant's style you know that it is his go-get-it-iveness, more than his strokes, which make him one of America's ranking stars. We mention this because we think that there is a moral in it somewhere, and wherever there is a moral we like to be in there picking away at it. We have ruined many beautiful things in our day moralizing over them. About all the damage we can do to the above picture can be expressed as follows: There are a lot of things you don't think you can get but that you really do manage to get by trying hard. And, contrariwise, there are a lot of things you go working and struggling to get, only to find that forces beyond your control have come and chiseled you right out of the picture.

Banker's holiday

A FRIEND of ours, a traveling man, returning to New York from a brief business trip to Indianapolis, reports that his one day in that city lives in his memory like a dream.

Arriving in Indianapolis on the morning of March 15, he noticed an uncommon excitability in the air, on people's faces, in their manner of walking and of going about things—a sort of apprehensiveness which he could only liken to the effect Halley's comet had on people when it shot within view in 1910.

Going directly to the president of a bank, with whom he wanted to conduct some business, the traveler noticed that the banker was not at all

his usual poised and proper self.

"Er, you have sort of caught me on an off day," said the banker. "I hardly expected anyone today."

"Then, if you wish, I will return tomorrow."

"No, no. Not tomorrow either. Not until Monday."

"Well, then, Monday," the visitor replied, preparing to leave. As a final word he thought he would ask what all the stir was in the city this morning. "Is there a convention?" he asked.

"Convention!" ejaculated the banker. "My dear fellow, don't you know what you have run into in Indianapolis today?"

The traveler replied that he was aware that something peculiar had come over the city, but he would have to plead ignorance as to what was causing it.

"Why, man, it's the state basketball championships," said the banker with indignation, reaching for his watch. "Ah ha," he breathed, "in just a minute now we will . . ." and he eagerly adjusted the radio on his desk. Over the morning air came the din from the Butler Fieldhouse where 14,888 recently breakfasted spectators were watching the opening of the tournament.

Harvard, pace-setter

THE new Harvard athletic policy, announced last month by President James B. Conant and Athletic Director William J. Bingham, is aimed to place the athletic program on the same basis as the other activities of the university which are largely supported by endowment. Dr. Conant's statement in part:

"The president and fellows have agreed that they will endeavor to build up during the coming years an endowment fund for athletics—a capital fund, the income of which will eventually become the support of intercollegiate and intramural sports. Gifts for this fund will be welcomed and it is expected that each year the corporation will be able to set aside some money toward this fund."

Harvard, Dr. Conant said, wishes "to get away as soon as possible from the vicious connection between football gate receipts and expenditures for the athletic program."

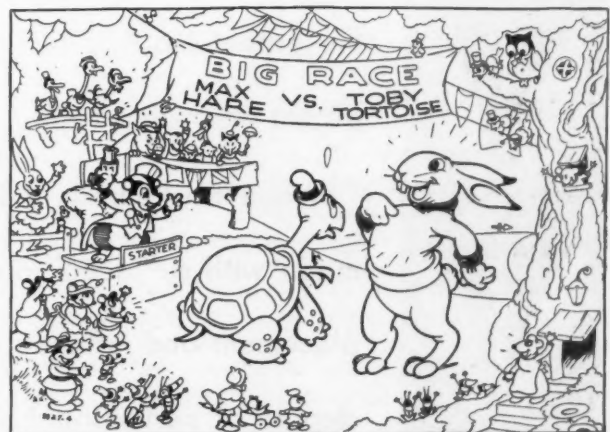
"As long as the athletic budget is drawn in terms of the expected revenue, all concerned must keep a weather eye on the football income," he said.

"It seems essential that we should have an athletic policy which will aim at removing the danger which now hangs over our heads like a sword of Damocles—the danger of another drastic loss in income from the football gate receipts which have since the war provided on the average more than 80 per cent of our income for athletics."

Harvard, of course, because of the wealth and eminence of her friends and alumni, is in a better position to pursue such a policy than the average institution. But Harvard is in such a position of advantage in regard to all her activities. The point is that she is now moving to make athletics a full member of her family, with the same financial status and security of all her other dependents.

Flash! Max Hare loses

NO better race, no closer finish, was ever run than that which Toby Tortoise wins from Max Hare in Walt Disney's Silly Symphony version of that immortal fable "The Tortoise and the Hare." We hope you get around to seeing this exciting picture with its strong ap-

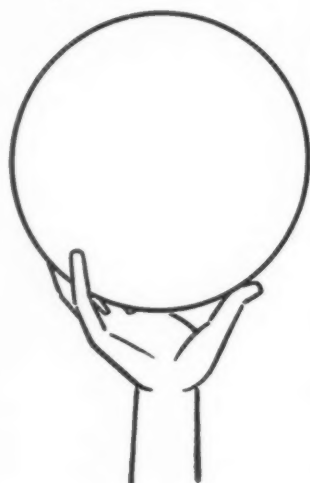


United Artists

peal to the sports-minded. Max Hare loses, of course, by a whisker, but it was not because he lacked speed, but rather because he had too much of it. He applies it, however, at the wrong times and in the wrong places, indulging in solitary and preposterous sessions of tennis, baseball and archery during the race with the plodding Tortoise. While the moral of the tale favors the Tortoise, the drama and color are all with the Hare, whose antics and showmanship are poignant with suggestions that he is, after all, only Max Baer in rabbit's clothing.

ANNOUNCING

A PROGRESSIVE DECISION ON BASKETBALL CONSTRUCTION

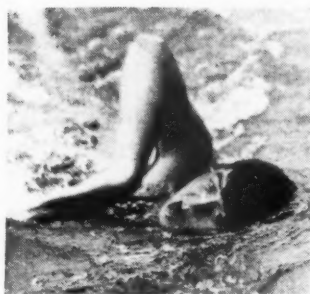


● In the interest of progress, we have determined to build our future Official Basketballs in the type of ball known as "laceless". We have long been cognizant of the fact that if and when bladder construction reached a sufficiently high degree of perfection, there would be decided advantages in the "laceless" ball over the "laced" model. This improvement in bladders and valves for inflated goods has now been attained.

Therefore we have arranged to manufacture "laceless" basketballs under the patent No. 1551099. We will build our Official Basketball under this patent according to our own individual design.

When basketballs were in their development stage, the covers were made with a "laced" opening—an obvious necessity for the removal, replacement and inflation of the bladders. Today, due to their present high degree of perfection, basketball bladders last as long as the casings. It is no longer necessary to remove or replace them, and modern valve type inflation has eliminated the old stem valve. Consequently there is no more need for an opening in the casing and a closing "lace" on a basketball.

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Latest Word in the Discussion on the Relative Merits of the Japanese and American Strokes

By L. de B. Handley



Above: Jack Medica, of the University of Washington, the wonder swimmer of the day, who, in the recent national A.A.U. indoor championships, slashed virtually all the world's free style records from 300 yards, in setting a new world's mark of 5:16.3 for the 500 yards. (The old mark was also his, 5:26.6.) He also covered 220 yards in 2:10.8, fastest competitive performance ever achieved over this distance.*



Johnny Macionis, Yale freshman, who was arm to arm with Medica in the record-breaking 220, until the final 20 yards, when Gilhula put on his whirlwind finish to beat him out of second place.



"A factor in the success of the Japanese swimmers was their admirable control of shoulders." Shozo Makino of the Japanese Olympic team, who finished second to his countryman in the 1,500 meters.

Above: James Gilhula, University of Southern California, who finished a split second behind Medica in the 220-yards, 440-yards, and 1500-meters N.C.A.A. championships in the Harvard pool last month, but who, a week later in the A.A.U. meet, was a full pool-length behind the Washington wonder when he set all clocks back in the 500. In the A.A.U. 220 Gilhula finished only a few feet behind Medica.

HE smashing victory gained by Nippon's men swimmers at the last Olympic Games was ascribed by many to an improved style of crawl claimed to have been evolved in Japan, and a veritable flood of literature on the subject has swept the world since—books, pamphlets, innumerable magazine and newspaper articles.

No two critics, however, appear to have presented exactly the same conception of the supposedly new stroke, let alone shown agreement in attempting to explain the reasons for its greater efficiency.

From all parts of the United States come reports of teachers and coaches experimenting with the Japanese crawl and each seems to have a different idea of its action. In Europe advocates of the Nippon methods are engaging in heated controversies over its characteristics. From Australia comes an article in which a well known expert calls attention to the fact that all home champions persuaded to adopt some version of Japanese stroke have suffered slumps and lost titles. The trouble apparently is universal.

Whether or not Japan has developed a better style of crawl than the American is a question which quite transcends in import the competitive phase of swimming. The stroke which affords a maximum of speed and endurance will provide the most effective means of self protection and life saving. It will profit not only the contestant, but the vast legion of non-

contestants who look to swimming for recreation, exercise, physical benefit or to guard life.

Let us, therefore, try to establish the fundamental traits of the Japanese crawl, weigh also the significance of general results in the Olympic contests of 1932, then use common sense in drawing conclusions.

That observers at Los Angeles have failed so signally to agree in describing what they saw there is not a bit surprising. Aside from the fact that most of them manifestly took as their model the one swimmer each particularly fancied, individual peculiarities stood out conspicuously—a composite sketch of the action displayed by the Japanese was more baffling than enlightening.

It was my good fortune, as coach of the American girl swimmers, to enjoy exceptional opportunities for study of the Japanese, at practice and in competition. Eager to discover the cause of their amazing progress, and knowing from experience the elusiveness of natatorial mental pictures, I took pains to jot down on paper full details of the strokes of all.

Yet when I was able to digest at leisure these notes, I found differences so substantial, so plentiful, in the action of the crawl stroke as used by the various Japanese, that it was impossible to form a definite idea of what the so-called Japanese crawl consisted of, as different from the crawl used by swimmers of other nationalities.

Undoubtedly foreigners eager to gain knowledge of American methods encountered the same difficulty, as the men who swam for the United States

showed no less a variety in form, few complying strictly with principles set forth by our leading authorities.

This lack of uniformity makes clear that to judge of swimming standards predominant in any country one must seek the views of its outstanding technicians, and not reach conclusions from the ways of a small group of its racing swimmers, even though they be topnotchers.

Luckily, in so far as Japan's crawl is concerned, we now have as a guide a lengthy essay by Katsuo Takaishi, captain of the victorious Olympic team. He not only dissects the home stroke, but he compares it with the American. We shall review and discuss the article presently.

First, though, there is need to take up the contention of many that the Japanese have introduced a valuable innovation by greatly quickening the recovery of the arms, a contention widely accepted because of the prominence of some of its sponsors.

Takaishi is of no help to us here. Strangely, he disposes of all acts of recovery with the casual statement they are immaterial, since the arms cannot offer propelling assistance while out of water.

One is led to wonder at the foregoing declaration, for a badly executed recovery may destroy body balance, submit the arm and shoulder muscles to costly strain, be responsible for a faulty entry. But the comment is of moment in that it reveals the absence among the Japanese of any special theory anent this phase of the stroke.

The point we must consider, then, is whether the Japanese Olympians did use, per-

[Continued on page 34]

*The world's record for the 220-yards is 2m. 9s., set by Weissmuller in 1927, in a solo time trial from a flying start. The flying start was ruled out three years ago.

MECHANICS OF THE BROAD JUMP

By Thomas Kirk Cureton

This is the fifth and final article of Prof. Cureton's series on the laws of physics and body mechanics as applied to performance in track and field events.

BROAD jumping efficiency is governed by the laws of mechanics of projection. Applications have already been made to the shot put¹ and the high jump² in this series of articles. The high jump involves similar principles with the emphasis changed in some of the characteristics. Efficiency is explained by applications to both the *internal* aspects of muscle mechanics and to the *external* flight of the jumper.

Internally the muscles must develop great power (force \times speed of contraction); first, to run fast; secondly, to spring upward from the take-off block. The power necessary to change the direction of motion of the center of gravity of the runner from straight line horizontal motion to an upward 45 degree angle of spring at the time of beginning the parabolic flight is certainly very great. There must be very fast and forceful action in extending the ankle, knee and hip joints so that effective action of the foot can be applied to the take-off block. A strong person may not be a good broad jumper unless he is capable of great speed of muscular contraction. Thus, the capacity for jumping is determined by the ability to develop sufficient internal power. The preparation of the muscles through rest, massage, proper nutrition and other training procedures affect the efficiency of their performance. This is the more subtle field of information for the coach. The number and quality of the muscle fibers, their arrangement, the conditions which surround them physically and chemically, their enervation and their range of action are the major elements.

Externally the coach is concerned with the "form" of the jump. The direction of the movements, their regulation in force, and the accuracy of the inter-timing of the movements determine *coordination*, a term which is synonymous with "good mechanics" or "form." The flight of the jump follows the general projection laws of mechanics:

$$(a) H = V \sin \theta t - 1/2 g t^2$$

$$(b) S = V \cos \theta T$$

KEY
 V = Take-off velocity from the block in ft./sec.
 H = Height of the jump in feet.
 S = Distance of the jump in feet.
 θ = Angle of take-off from the block to the center of gravity as the foot pushes the body into the air.
 T = Total time of flight.
 $t = 1/2$ total time of flight.

Practical Verification of the Projection Laws. The practical truth of the projection laws may be visualized by experimenting with a garden hose. (Illus. I.) It will be found that the farthest distance can be obtained with a stream of water when the angle of take-off from the nozzle at the ground is 45 degrees. For a constant velocity of projection (V), the distance (S) and the time (T) depend directly upon the angle of take-off (θ). From the table of theoretical values³ (Table A, opposite page) it may be seen that:

1. The greatest distance is obtained when the take-off angle is 45 degrees, with the projection velocity constant at all angles.
2. That the height of the water increases with the angle of take-off.

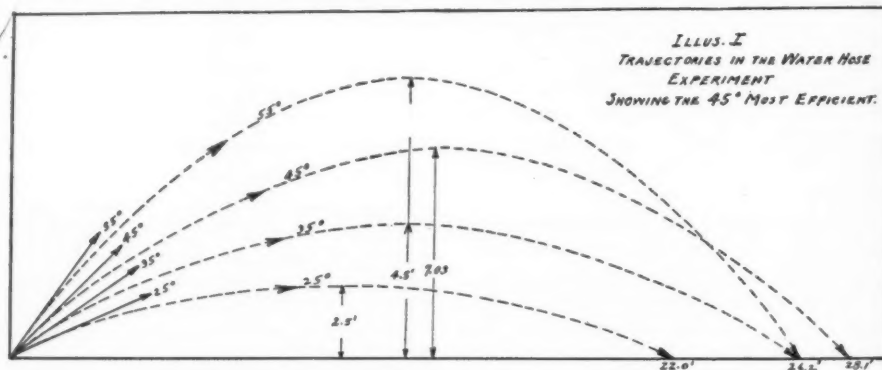
THEORETICAL SPECIFICATIONS

The specifications for a broad jump of any distance can be computed by

energy required. *A slower runner can actually jump farther with a perfect take-off than a faster runner who deviates from the ideal angle.* This principle is true for every style of jump for distance. It is a fundamental principle which every coach should study carefully.

Take-off Velocity (V) and Projection Energy ($K. E. = 1/2 M V^2$)

The projection energy of the jump is the most important of all the factors governing broad jumping. This is reflected directly in the take-off velocity (V). For jumps of 15, 20 and 25 feet, the take-off velocity increases proportionately from 21.9 ft./sec. to 25.3 ft./sec. to 28.3 ft./sec., respectively. The time in the air, the height and the distance of the jump



using the projection laws. Experimentation shows that the broad jump follows these laws within any desired limit of practical application. An example of such experimentation will be discussed in a subsequent paragraph.

Analysis of the theoretical specifications as computed for the 15, 20 and 25 foot broad jumps shows at once some of the very important principles which govern efficiency. The specifications are given (Table B) on the opposite page.

The Angle of Take-off (θ)

The optimum angle of take-off is 45 degrees. From the tables above it may be seen that the 45 degree angle not only gives the greatest distance but is the most economical in the

all depend directly upon the take-off velocity with the angle of take-off held constant. Greater speed in the take-off seems to be related directly to ability to run fast and to spring from the block without greatly checking this speed. Much practice is needed here to time the step. Over-reaching or marked chopping of the stride usually checks the velocity and hurts the jump.

The energy relationships are interesting when compared on a per cent basis. The 15 foot jump with a 45 degree angle of take-off requires 1118 ft. lbs. of energy as calculated by the $K. E. = 1/2 M V^2$ formula. Using this as the standard of reference, the 20 foot jump requires 33% more energy and the 25 foot jump 67% more. *The distance of the jump is directly proportional to the energy of projection.*

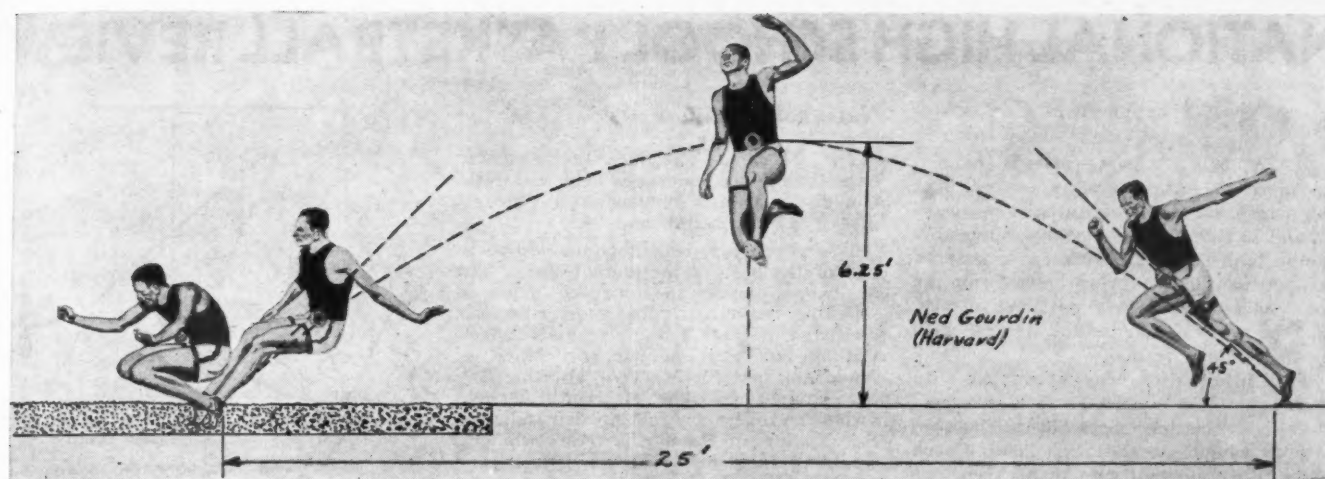
PHASES OF THE BROAD JUMP

The broad jump may be conveniently divided into four major phases,

¹Cureton, T. K., "Mechanics of the Shot Put," *Scholastic Coach*, March, 1935, pp. 7-10, 23.

²Cureton, T. K., "Mechanics of the High Jump," *Scholastic Coach*, April, 1935, pp. 9-12, 35.

³ $T = \frac{2V \sin \theta}{g}$; $H = V \sin \theta t - 1/2 g t^2$;
 $S = V \cos \theta t$.



Illus. 11. Adapted from "College Athletics." (American Sports Pub. Co.)

namely, (1) the approach, (2) the take-off, (3) the flight, and (4) the landing. Each of these will be discussed briefly in light of the mechanical principles. (Illus. II)

The Approach should be long enough to gain maximum velocity. While this varies somewhat with different individuals, studies have shown that usually at least 60 feet is required⁴ and most sprinters require more. At 90 feet the greatest part of the speed will have been developed. A longer approach may bring on fatigue and hurt the spring at the take-off. The approach should be carefully measured so that the take-off block will be reached by the jumping foot without much unusual adjustment of the stride. Most jumpers report that a slight chopping of the stride in the last few strides aids getting enough height. Two check marks are usually sufficient, these measured backward from the take-off block.

The Take-off follows similar principles to the high jump in that the foot-stamp, forward and upward kick of the free leg, and upward lift of the arms combine to give the reaction force which projects the jumper into the air. These movements combine power of leg extension with inertia of the lifting movements to raise the center of gravity.

Marey and du Bois-Reymond studied the jump. Amar⁵ summarizes this work and shows chronophotographs taken by Richer and Londe. These studies emphasized (1) that the jump follows the projection laws of mechanics (2) that the running take-off from one foot is more effective than the take-off from both feet (3) that the greatest work is done by the muscles

[Concluded on page 21]

⁴See Illus. IV in Feb. article, "Mechanics of Track Running."

⁵Amar, Jules, *The Human Motor*, E. P. Dutton & Co., pp. 370-71; quotes Marey (1888), *Comptes Rendus Sciences*, vol. ciii; also, du Bois-Reymond, "Zur Physiologie des Springens," *Arch. f. Anat. u. Physiologie Abt. Suppl.*, 1905, p. 329.

TABLE A. THEORETICAL VALUES BASED ON WATER HOSE TEST

Take-off Angle θ	Sin θ	Cos θ	Take-off Velocity ft./sec.	Time of Flight (T)	Time to Peak Height (t)	Distance of Water (ft.)	Height of Water (ft.)
20	.34	.94	30	.63	.31	17.7	1.55
25	.42	.91	30	.78	.39	22.0	2.46
30	.50	.87	30	.93	.47	24.3	3.50
35	.57	.82	30	1.06	.53	26.2	4.54
40	.64	.77	30	1.19	.59	27.5	5.70
★45	.71	.71	30	1.32	.66	28.1	7.03
50	.77	.64	30	1.43	.71	27.5	8.80
55	.82	.57	30	1.53	.76	26.2	9.40
60	.87	.50	30	1.62	.81	24.3	10.60

TABLE B. THEORETICAL SPECIFICATIONS FOR THE 15 FT. JUMP

Take-off Angle θ	Sin θ	Cos θ	Projection Velocity ft./sec.	T (sec.)	t (sec.)	S (ft.)	H (ft.)	Kinetic Energy* (ft. lbs.)	Extra Energy %
35	.57	.82	22.7	.80	.40	15	2.6	1202	7.5
40	.64	.77	22.1	.88	.44	15	3.1	1139	1.9
45	.71	.71	21.9	.97	.49	15	3.8	1118	0
50	.77	.64	22.1	1.06	.53	15	4.5	1139	1.9
55	.82	.57	22.7	1.16	.58	15	5.4	1202	7.5

20 FOOT JUMP

35	.57	.82	26.2	.93	.47	20	3.5	1600	7.1
40	.64	.77	25.5	1.01	.51	20	4.1	1515	1.4
45	.71	.71	25.3	1.11	.56	20	5.0	1494	0
50	.77	.64	25.5	1.22	.61	20	6.0	1515	1.4
55	.82	.57	26.2	1.34	.67	20	7.2	1600	7.1

25 FOOT JUMP

35	.57	.82	29.3	1.04	.52	25	4.3	2000	7.1
40	.64	.77	28.6	1.14	.57	25	5.2	1908	2.1
45	.71	.71	28.3	1.25	.63	25	6.3	1868	0
50	.77	.64	28.6	1.37	.69	25	7.5	1908	2.1
55	.82	.57	29.3	1.49	.75	25	8.9	2000	7.1

NATIONAL HIGH SCHOOL BASKETBALL REVIEW

WHAT happened in U. S. state-organized high school basketball this past season is summed up more or less accurately on the next few pages. The table of statistics on pages 12 and 13 shows who won, who was beaten in the final game, the different classes of competition, how many spectators saw the tournaments, what they paid per person, and the types of offense and defense used by the winning teams.

This information was assembled with the cooperation of the state high school athletic association offices and the coaches of the winning teams. Scholastic Coach takes this opportunity to thank them one and all. High school sports leaders everywhere, who find this table of interest and value, no doubt would also like to express their thanks.

In addition to the state high school championships there are three inter-state high school championships worthy of note: (1) The National Catholic championship held in Chicago; (2) The New England championship held in New Haven, Conn.; (3) the Eastern States tournament held in Glens Falls, N. Y.

After winning the Kentucky State High School championship, St. Xavier of Louisville went on to Chicago to win the National Catholic. Leonard D. Sachs, basketball coach of Loyola University of Chicago, where the National Catholic was staged, gives an account of that tournament herewith.

After winning the Connecticut High School championship, Meriden High School, coached by Frank Barnikow, won the eleventh annual New England High School tournament, sponsored by the New England Council of Secondary School Principals Association.

After winning the Washington, D. C., Inter-High School League championship, and the Metropolitan championship, which included teams from Virginia, North Carolina, Maryland and the District of Columbia, Eastern High Schools of Washington, D. C., went to Glens Falls to win the Eastern States tournament. Eight teams were selected for this tournament, from four states (New York, Massachusetts, New Jersey, Pennsylvania) and the District of Columbia. In the final Eastern defeated Brown Preparatory School of Philadelphia, 43-29. Both teams in the final used straight man-to-man defense. Eastern, coached by C. M. Guyon, employed the so-called "pro" style of ball, with its emphasis on possession of the ball, short passes, working it in for set shots. Brown Prep used a fast-breaking offense with an occasional double screen around the basket, but they tired badly in the stretch.

National Catholic

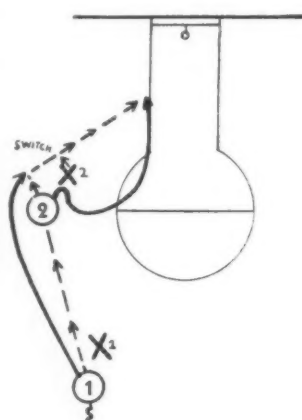
The National Catholic interscholastic basketball tournament was held at Loyola University Alumni gymnasium in Chicago, March 20, 21, 22, 23, and 24.

This year's tournament undoubtedly was one of the best of the annual series. The 32 teams played an improved game of scientific basketball. The quarter-finalists consisted of three Indiana teams (Central Catholic of Fort Wayne, St. Mary of Anderson, and St. Mary of Huntington), St. Francis Mission of South Dakota (whose members are full blooded Indians), St. Xavier of Louisville (the winner), Spalding Institute of Peoria, Illinois, and St. Mel High of Chicago (runnerup), and Catholic High of Baton Rouge, Louisiana.

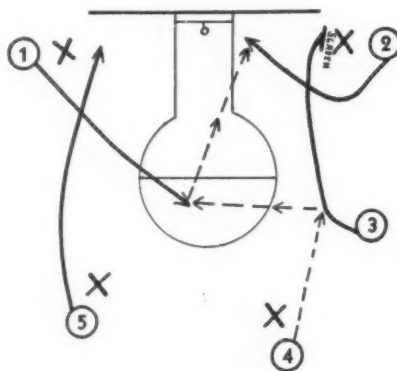
St. Mary of Huntington and St. Francis Mission used a zone defense. Both used

three men out and two back with the weak side guard covering the pivot man. The Indians were again a colorful team, using blind passes. The clever antics of their small forward, Jordan, were particularly amusing to the crowd. Central of Fort Wayne had a splendid team and were defeated by the Mission squad in a close game. Xavier had trouble against a flashy Huntington team which was adept at long range shooting. A very clever, smart, small team from Anderson nosed out a fine team from Baton Rouge in the last few seconds of their game. St. Mel had little difficulty with the tired Spalding outfit. The semi-finals resulted in easy victories for Xavier and Mels.

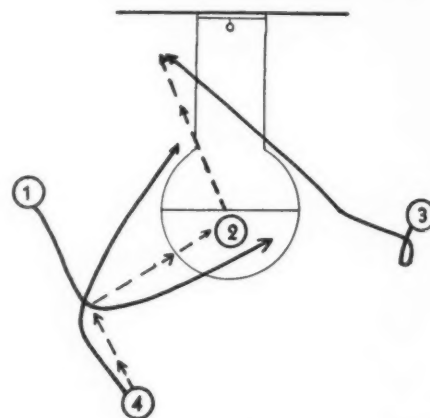
The championship game was a thriller between two well-matched teams and it was only in the last few moments that Xavier pulled away to a 29-24 vic-



In the National Catholic St. Mel of Chicago pulled this deception on a switching guard which caught the eye of our correspondent. 1 long-passes to 2 and breaks, eluding his guard, going through the alley and receiving toss pass from 2. As Guard X-2 moves to cover 1, 2 pivots, circle-cuts for basket and receives high pass or bounce pass from 1.



This set-up proved effective for Colorado Springs H. S., state winners, coached by J. W. Erps. It suggests the trend the pivot-post attack may take next year when the time of a player in the lane is restricted to three seconds, with or without the ball. 1 cuts out into the pivot position, receiving pass at once from 4 or 3 (3 in this case). 3 then moves in to screen for 2 who cuts for basket. "Quite a number of goals were made by 5 getting away from his opponent and receiving pass from 3 or 1," writes Coach Erps.



"A play situation used by us with success during the state tournament, especially well adapted to our front line, is shown above," writes Ray Dunn, coach of Mayville High School, Wisconsin Class B champs. "1 breaks up, receives ball from the guard, passes to the hub, and crosses in front. 3 (left-handed forward) breaks up, rolls to the outside putting guard in pocket, then breaks hard for the basket. 2 fakes to 1 coming across and paddles backward to 3."

tory and the national championship.

The majority of the competing teams used a pivot man and he was primarily a scorer. St. Xavier's pivot man played as a feeder and his clever ball handling and passing was undoubtedly one of the main reasons for the success of St. Xavier High school.

The ball was cleverly handled by every player on the Xavier team and there was little wasted motion. In fact both finalists used much the same style; on defense a wide-awake switching man to man.

LEONARD D. SACHS

Notes on state tourneys

THE regional plan of elimination was used for the first time in Missouri. The teams desiring to be assigned to regions registered in January. From this registration 16 teams were assigned to each region to compete for the regional championship. In a few areas the registration was too heavy for a 16-team regional tournament, so the weak teams were eliminated by a plan of ranking based on season's record.

The one team in the Missouri final tournament that did not go through a regional tournament was Northeast High of Kansas City, winners of the state championship. Northeast came in as the representative of Kansas City high schools, acquiring this right by pure luck. In Kansas City two schools tied for the city championship, and a coin was tossed to decide which would enter the state final.

Practically every tournament admitted students at anywhere from 15 to 50 cents less than the admission for adults. Season tickets for the duration of the tournament were generally available. In some states, Indiana for instance, only season tickets were sold.

The lowest admission charged by any state was 10 cents—by Maryland. But no admission at all was charged by Virginia. "Sport for sports sake is the policy of our state organization," writes Charles H. Kaufmann, executive secretary of the Virginia High School Literary and Athletic League.

THE states of New York, Delaware, Massachusetts and California do not conduct championships. "The only state meet which we continue is track," writes C. L. Biedenbach, secretary-treasurer of the California Interscholastic Federation. "We hope that the rest of the states will catch up with us sometime."

Along this line the following note was received from George F. Hendricks, Delaware state director of physical and health education: "Three years ago the state by ballot decided to eliminate championships of all types. To date, as far as we are concerned, such a move seems to have been for the best, for according to our records we now have greater numbers participating, more satisfactory schedules and little or no friction."

Mead H. S., Nebraska Class B winners, played through the season undefeated. In 23 games Mead scored 1045 points, an average of more than 45 per game.

DADEVILLE, our opponents in the final game of the state tournament, used a zone defense, with which they had been very effective. So we devised a system which completely befuddled their defense," writes Hilmon Holley, coach of Tuscaloosa High School, winners of the Alabama title. "We put both our forwards on the same side, one behind the man who was covering the back zone on the right and one in front of him. It was impossible for this defensive man to cover both our forwards, so we scored most all our points in the final game from this one formation."

Michigan and Tennessee have state-sponsored regional championships, but no statewide championship.

Tennessee has three regional tournaments for boys and as many for girls. They have not had a state championship for girls since 1929; for boys since 1931.

The Florida final between which Miami won from St. Petersburg went three extra periods.

Phoenix won the Arizona championship for the fourth time since the tournament was started in 1921.

The Ohio Class A winning coach, Luther Hosfield of North High of Akron, sings the praises of the zone defense his team used while their opponents used the man-to-man. But the Ohio Class B winning coach, Magellan Hairston of Waterloo, stands up for the man-to-man which succeeded where the opponents' zone fell down in the B final.

"It is to our defense that I attribute most of our success," writes Coach Hosfield of Akron North. "By far the greater majority of Class A schools in Ohio use a man-for-man. I believe there can be little question

but that a team that has been playing against a man-for-man practically all the time will find itself handicapped when suddenly called upon to penetrate a zone. Akron North was the only Class A team in the tournament this year to use a zone defense.

"Akron West was the only team we played that had much success in penetrating the zone and they were familiar with its operation, having played against us as well as having had the opportunity of watching our play during the season."

"The type of zone we used was the 2-1-2. We floated our big forward, who was the most experienced player, in the middle position where he effectively spoiled any chance of the opposition using the pivot to advantage. Our two fastest boys were used in the two front positions where they continually worried the offense and were in excellent position for a fast break. A great many of our points came as the result of an intercepted pass and a quick break down the floor for an easy shot. We played our center in one corner where speed and clever foot work were not as essential as in the middle position, but where he was able to use his great height effectively in blocking shots and playing the ball from the backboard."

"In our final game we were opposed by Coshocton, a really fine team and one that

more than matched us in height. However, they were unable to penetrate the zone and apparently began to "press," with the result that their passing and shooting were inaccurate and the game soon turned into a rout. In this game our pivot man scored 25 of our 47 points, Coshocton connecting for 15 points. There is no doubt but that we were exceptionally "hot" in this game while Coshocton was definitely off form. Incidentally, this is the first time in the history of the tournament that the title has been won by a team using a zone defense."

Coach Hairston of Waterloo says that his team was defeated only once by a zone defense in three years, and then it was on a very small floor. Waterloo's opponents in the final, Oxford Stewart, used a compact zone under the basket which was not easy to penetrate, but it was incapable of breaking-up the possession-of-the-ball tactics of the Waterloo boys after they got a six-point

lead in the second quarter and refused to take chance shots.

THERE are two preliminary tournaments in Maine—the eastern and the western. Any secondary school team is

eligible to be chosen as one of the teams in these tournaments. The western tournament, held in Lewiston, selects eight teams from its section of the state. The eastern, however, is more complicated. There are three tournaments—two of four teams each and one of eight teams. From these tournaments four teams are selected for the eastern state championship. The final tournament for the state championship is a play-off between the winner of the eastern and the winner of the western.

Both teams in the North Dakota final, Grafton and Wahpeton, were Class B teams that won their way into the final tournament through the process of challenging and defeating one of the eight teams on the Class A list.

Art Cheyne, coach of Yakima, the Washington state winners, explains the operation of their man-to-man defense as follows:

"We change men, pick men up or keep our own man depending upon the occasion or type of offense. Each boy is taught the value of double checking. Against a team using set plays we do not change men; instead we endeavor to open up our defense in order to keep our men from being blocked out. Against an offense that blocks anywhere with no set system, we change men. These things are entirely up to the type of offense we are against."

"There were but few 'five man' or zone defenses at the state tournament. We played against but three teams all season that used it. Both the zone and five man defenses have proven ineffective weapons in the past few years. Only two of the teams at this year's tournament used it and they were helpless at the hands of a team that was willing to keep possession of the ball, take their time about scoring, and handle the ball fast and well."

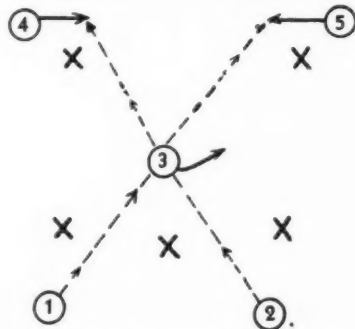
MONTANA has more than the average respect for the zone defense. Custer County H. S. of Miles City, Class A winners, used it; and while Poplar High School, Class B winners, did not use it, their coach, Carl O. Hansen, is ready to tip his hat to it when it appears under the auspices of such wizards as the Belt High School team, which almost (21-23) beat Custer in the divisional final. Coach Hansen gives Poplar's system against each of the two principal types of defense:

"Against the man-to-man defense we used the pivot play, keeping our center in the hole, playing up or back, varying his position according to the position of the guard, and also shifting slightly with the position of the ball on the floor. We used the guards breaking and forwards cutting across in front of the pivot position on screen plays. The play could start either to a forward or center from a pass in from the guards. We

always kept the play covered to prevent as much as possible a fast break if the ball was intercepted.

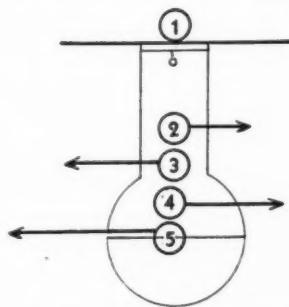
"Against a zone defense we played the center back under the basket breaking out to meet the pass when the pass was from the guard, thereby drawing the defensive guards out with him, leaving that area open for a quick break under the basket from the sides by either forward. We played the forwards and guards to the sides and in front of the defense so they could keep the ball moving among the defense to draw the defense out of position. While the zone defense prevented a lot of shots under the basket it always gave shots to the guards just outside the foul circle and forwards from the side. If they pulled out to stop these, the center would be open to score under the basket. We found that playing against a zone defense was less tiring and that means a lot

[Concluded on page 38]



"We find the weaknesses of most zone defenses are failure to get their defense set before a fast-breaking offense, and inability to cover a three-point attack," writes Maurice Given, coach of the Virginia Class B champs, Alexandria H. S. Above Coach Given shows his basic formation for attacking the zone defense. "Ball goes from either 1 or 2 to 3 who pivots either way. If defense goes toward 3 he simply passes to 4 or 5 cutting. A couple of teams we faced broke up this simple attack by using three men to block the zone around the basket, with two out front. This put a crimp in our pivot man, but we then set a double pivot and were not bothered greatly."

trate the zone and apparently began to "press," with the result that their passing and shooting were inaccurate and the game soon turned into a rout. In this game our pivot man scored 25 of our 47 points, Coshocton connecting for 15 points. There is no doubt but that we were exceptionally "hot" in this game while Coshocton was definitely off form. Incidentally, this is the first time in the history of the tournament that the title has been won by a team using a zone defense."



The Newport, Ky., High School team used this tandem formation with surprising success in their march to the Kentucky state final, where they lost to St. Xavier. "Lucky for us," writes Coach Bob Schuhman of St. Xavier, "there weren't many out-of-bounds balls for Newport under their own basket."

the opponents' zone

State High School Basketball Tournaments, 1935

Type of Defense used by Winning Team	Type of Offense used by Winners in Finals	Price Range of Tickets for Final Game	Price Range of Tickets for Tournament Games	Attendance at Final Game	Total Attendance during Tournament	No. of Schools (teams) in Final Championship Tournament	No. of Schools Competing in State Association Basketball all during 1934-35 Season	Runner-Up	Winner
Man-to-man	Deliberate. No fast break. Designed to penetrate zone.	.50 Season ticket	1.50	500	1,700	16	325	Tallapoosa Co. H. S., Dadeville	Tuscaloosa
Zone and man-to-man combination	Fast break	.25	.40	700	3,000	16	50	Miami	Phoenix
Man-to-man	Fast break	.50	No data	No data	No data	24	356	Greenland	Pine Bluff
NO STATE OR SECTIONAL CHAMPIONSHIPS IN CALIFORNIA									
Man-to-man with zone principle	Fast break; also deliberate. Few set plays.	.50	.25-.50	1,500	6,000	16	200	Manual Training H. S., Denver	Colorado Springs
Class A-B—Man-to-man Class C-D—Zone	Class A-B—Pivot-post, 2 men in, 2 out Class C-D—Fast break	Class A-B—.50 Class C-D—.40	Class A-B—.30-.50 Class C-D—.25-.40	Class A-B—2,500 Class C-D—300	Class A-B—14,000 Class C-D—1,500	Class A-B—4 Class C-D—8	85	Class A-B—Warren Harding of Bridgeport Class C-D—New Milford	Class A-B—Meriden Class C-D—Old Saybrook See reference note 1
NO STATE CHAMPIONSHIPS IN DELAWARE									
Man-to-man	3 men through intentional and automatic screens. Dependence on medium-long shots.	.25	.75	407	2,369	16	180	St. Petersburg	Miami Senior
No data	No data	.25-.50	.15-.25	No data available	No data available	20 classes in 2 classes	300	Group C—Central H. S., Hatcher Group B—Perry	Group C—Clermont Group B—Albany
Man-to-man	Fast break and modified pivot	.75	.50-.60 season ticket, 1.50-2.25	2,000	5,200	8	166	Twin Falls	Burley
Man-to-man, changing to zone at times	Deliberate maneuvering to close in defense and shoot over their heads. Corner shots. Tall rebound men.	.35-.75	.25-.50	7,500	41,000	16	Approx. 2,000 includes lightweight	Thornton Twp. H. S., Harvey	Springfield
Man-to-man with man floating back to cover weakness on pivot.	Slow break with a few screens	2.50 per season ticket		15,000	90,000	16	781	Jeffersonville	Anderson
Man-to-man, seldom switching	Slow break; screens, pivot-post play, set shots	2.00 per season ticket		4,600	30,000	16	824	Grinnell	Mason City
Class A—Man-to-man, with occasional swap	Class A—Fast break	.50-.75	.35-.75 season ticket, 1.50-2.00	Class A—4,500 Class B—900	Class A—16,000 Class B—38,500	32 in two classes	720	Class A—Winfield Class B—Oxford	Class A—Chanute Class B—Sharon
Man-to-man, frequent switching	Weaving-screening, pivot man 2-3 offense	.75-1.50	.50-1.00	3,500	19,000	16	571	Newport	St. Xavier of Louisville
Man-to-man	Fast break long passes. Tall men. No set plays.	.15-.25	.10-.25	1,200	3,500	21	500	Martha ville	Harris
Man-to-man	If fast-break fails, go into formation	.50		1,975	6,000, Eastern finale; 7,736, Western finale	2	24 in preliminary tournament	Winslow	Stephens H. S., Rumford
Man-to-man	Deliberate, pivot-post	.10-.25		700	4,000	13	46	Crisfield	Pennsylvania Ave. H. S., Cumberland
NO STATE CHAMPIONSHIPS IN MASSACHUSETTS									
Man-to-man	Fast break, with man in hole, dominated play.	.50-.75	.40-.75	7,500 at 2 finals	15,000 at 2 Districts	See reference note 1	700	No state-wide finals. Upper Peninsula and Lower Peninsula championships in different classes. See reference note 1.	
Man-to-man	Man-in-hole partly; screens. Very seldom fast break.	.35-1.25	.25-1.00	6,412	16,281	8	445	Glencoe	Austin
Man-to-man	Fast break	.40	.25-.40	833	2,995	16	16 teams in each of 16 regions	Columbia	Kansas City
Class A—Shifting Zone Class B—Man-to-man	Class A—Fast-break Class B—Pivot man, 6' 3" slow, deliberate	.25-1.00, Season tickets 1.50-2.50		2,300 final day	4,000	4	175	No runner-up. Round Robin, 4 teams, 2 from each class. See reference 1.	Class A—Custer Co. H. S., Miles City Class B—Poplar

1Connecticut—High schools compete during the regular season in four classes, A, B, C, D. On the basis of the season's record, eight teams were selected for a final A tournament, eight for a final B tournament and eight for a final C-D combination tournament. The runnersup and winners of the A and B tournaments then appeared in a four-team A-B combination for the state championship.

2Michigan—No state-wide finals. Upper Peninsula finals in 3 classes, 4 teams for each. Lower Peninsula finals in 4 classes, 8 teams for each. Results:

Upper Peninsula winners: Class B—Ishpeming. Class C—Gwinn. Class D—Trout Creek. Upper Peninsula runnersup: Class B—Ironwood. Class C—Ewen. Class D—Champion. Lower Peninsula winners: Class A—Lansing Central. Class B—Grand Haven. Class C—Holland Christian. Class D—Stevensville.

Lower Peninsula runnersup: Class A—Flint Northern. Class B—St. Theresa of Detroit. Class C—Cass City. Class D—Pellston.

3Montana—The two other teams in the final round-robin were: Miles City of Class A and

Lodge Grass own class. wide cham among the of Miles City one defeat. 4New Jersey Group

BASKETBALL COACHES DISCUSS SCREENS, ETC.

By George R. Edwards

Report of the Annual Meeting of the
National Asscn. of Basketball Coaches

THAT the continuous growth in popularity of basketball does not signify that the game is without imperfections, and still is open to improvement, appears to be the opinion of many important coaches of the game, if one is to judge by the expressions of the members of the National Association of Basketball Coaches during their annual convention in Chicago early in April. After two days of candid, detailed discussions and debates the group summed up its ideas in the form of recommendations to the National Rules Committee on the third day.* On some of the points a difference of opinion existed; on others some change was desired but there was doubt as to the best move to make; and on still others the group was agreed. The features discussed and on which opinions were expressed are listed here with a short explanation of the trend of thought:

1. It was agreed unanimously that the size and the color of the present official balls are satisfactory. This followed reports of tests with balls that were black, orange and the usual tan.

2. The standard 18-inch basket ring was voted as satisfactory, at least for the present. Experiments with a 20-inch basket were neither complete nor convincing. The Research Committee was requested to continue and to enlarge the scope of these tests, and report at the 1936 meeting.

3. A motion was made by Eastern delegates that in the interest of uniformity the backstops should be constructed of one material. Some backstops are made of wood, some of steel, and others of glass. The rebounds from these surfaces vary, and a few felt that the adoption of one standard material would be an improvement. However, the assembly overwhelmingly defeated the motion.

4. A motion was made and passed that the note under Rule 10, Section 1, be made a part of the code. The note suggests that where the sidelines are obstructed a restraining line should be drawn three feet inside the court boundaries. Some schools where obstructions exist ignore this suggestion, and the coaches would like to make such courts unofficial.

5. The present 10 foot height of the basket was deemed satisfactory. Many experiments with 11 and 12 foot baskets have been tried, but the results did not indicate that this change would be of any material value.

6. There was some agitation to move the backstop two or four feet further into the court, or else draw the end line further behind the goal. Advocates contended that either of these changes would reduce out-of-bounds balls at the end line, and would relieve congestion around the bas-

ket. The coaches voted to retain present court dimensions, but referred the plan to their Research Committee for more tests.

7. A new type of basket net made of white rawhide was presented. The invention, while higher in price than the official cotton cord, wears much longer, holds its shape better, and "hangs" the ball momentarily on successful shots. The coaches, however, voted that the present official net is satisfactory.

8. A scheme to reward field goals thrown from any place more than twenty feet from the basket with three points did not meet with approval. Advocates of this idea expected it to encourage more long shooting and to draw out retreated defenses.

9. Regulations regarding traveling and dribbling were discussed briefly. It was voted that these rules now are being well understood and enforced, and that any addition is unnecessary.

10. A few would like to return to the two minute time-out, and others have tried a fifteen minute rest period between halves with success, but the majority voted that present timing rules are satisfactory.

11. Personal foul regulations came in for considerable debate in four ways:

(a) It was proposed that the number of personal fouls before disqualification be raised to more than four in order that players may stay in the game longer. This was defeated overwhelmingly.

(b) That back court fouls are not as serious as those made in the front court and should not be penalized as harshly again was submitted. It was suggested that a back court personal should be charged against an offender, but that the ball should be awarded to the offended side out-of-bounds. The plan was defeated.

(c) The proposal was made that after a double foul the players involved should be charged with a personal foul, but that freethrow trials should be eliminated and the ball tossed at center. The coaches voted, however, to permit the freethrows.

(d) The ticklish situation often developed when a player makes a basket and it is not allowed because a teammate has been fouled almost simultaneously was discussed at length. The coaches favored the idea of a refusal of the penalty, but feared that such a choice might place an embarrassing burden on the officials. A recommendation was made that the wording of such a provision be left up to the Rules Committee in case it approved the idea.

12. The center court line and the ten second provision were discussed briefly, but the Association voted that no change in these regulations should be made.

13. Additional jumping circles to be drawn at the freethrow lines for the purpose of jumping after all held balls were suggested, but the plan was not acceptable.

14. Reports of too much crowding and fouling around the center jump were nu-

merous. To improve this situation a scheme was approved to draw a circle of about 8 foot radius around the present center circle and assess a violation against any non-jumper who encroaches in this area before the ball is tapped.

15. More time and closer consideration was given to the proposal to modify the center jump as tried by the Pacific Coast Conference than any other rule. The plan tested in all of the southern division games in that conference was explained fully in an exhaustive report by John Bunn of Stanford and Sam Barry of Southern California. The modification consisted of substituting for the center jump an out-of-bounds play on the end line by the team scored upon following field goals and free throws, except for free throws awarded for technical or double fouls. At the start of the half, and after free throw trials for technical or double fouls the customary center jump would start the play. Arguments favoring this scheme are listed later in this article.

A similar proposal was defeated unanimously at the 1934 convention in Atlanta, but this year's experiments have convinced many coaches that it has merit. The first vote at the 1935 meeting was so close that a recount was ordered with the modification losing by only five votes. Opponents of this change felt that additional tests are necessary, and that such a drastic move against a feature which has been in the game since its foundation was not wise on the eve of the start of basketball in the Olympic program.

16. The most important change desired by the coaches dealt with the problems presented by play around the pivot post. The three second rule as now operated has failed, in the opinion of many, to retard fouling as much as was predicted. Officials in all sections vehemently maintain that the pivot post is their greatest "headache." In an attempt to reduce this evil the coaches have suggested the following change to the rule makers:

"An offensive player may not remain longer than three seconds in the free-throw area and lane between the free-throw line and the end line longer than three seconds, with or without the ball, except when trying for a loose ball. The penalty should be a violation."

17. Sharing importance with the pivot post play were discussions regarding interpretations of the screening and blocking rules. Intersectional differences in this regard have caused more unpleasantness during the last season than ever before, and the coaches were anxious to obtain uniformity. It seems that only in the mid-Atlantic seaboard states do interpretations differ widely from those in the rest of the country. In that region any offensive player without the ball is considered to have fouled whenever his position hinders a defensive man who is in pursuit of an opponent.

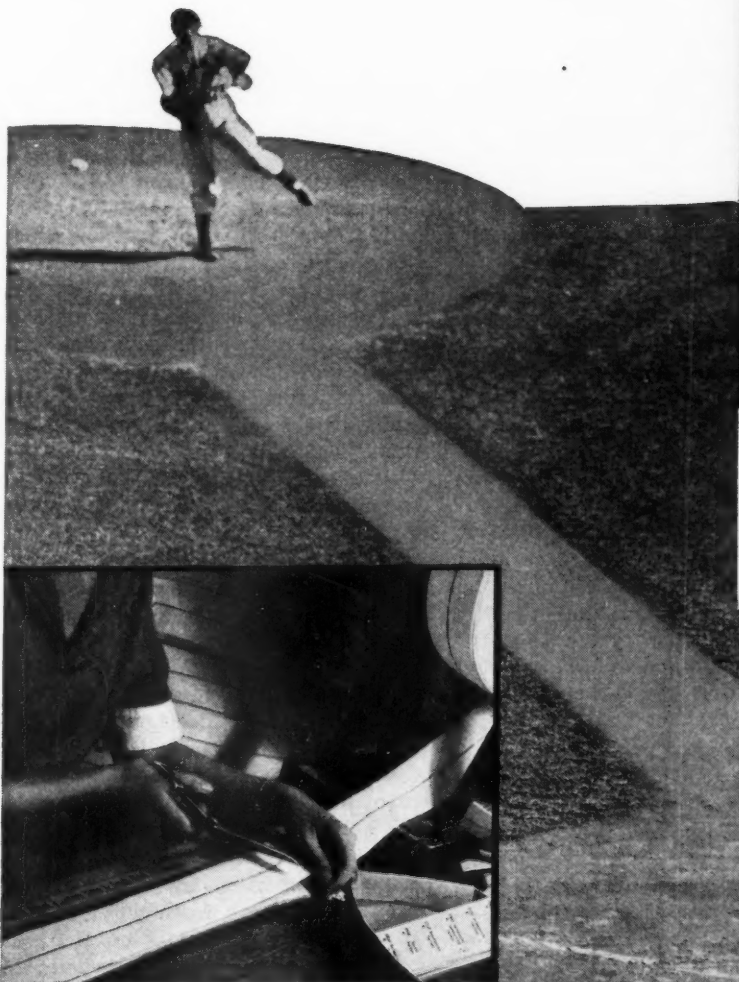
For example, it is legal in the East for an offensive player to maneuver his guard into another offensive man at the pivot post providing the post player has the ball. Should the post player *not have the ball* he has fouled if any defensive man under such conditions collides with him.

[Continued on page 16]

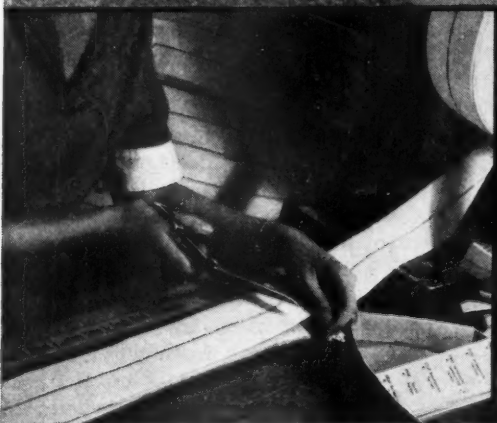
*The extent to which these recommendations were acted upon favorably by the National Rules Committee (official name, National Basketball Committee) is seen in the article on 1935-36 rules changes (see page 19).

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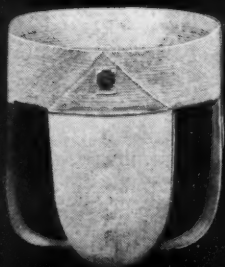


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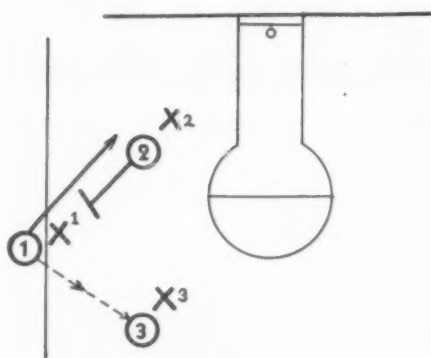
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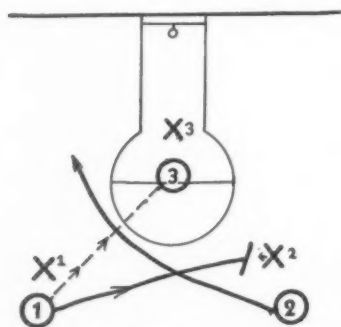
All other sections disagree with this ruling and assume that a player is entitled to any position on the floor not already taken by another, and that possession of the ball is not a deciding factor. To clarify by use of a definite situation two typical plays were diagrammed and described, and the coaches voted on their interpretations. The plays together with accepted rulings were:



SITUATION I

1, being guarded by X-1, has the ball out of bounds and passes to 2. 2 moves up close to the rear of X-1 and stops. As 1 runs towards the basket his guard, in attempting to stay in position, collides with 2 who is simply standing still.

The coaches voted that 2 has performed a screen play and that his move is legal. NOTE: Should 2 run into X-1, or try to keep X-1 from going around him by shifting position, holding or pushing him, then 2 has committed a blocking foul. Briefly then, 2 has made no foul simply by taking a position close to X-1. He is entitled to any unoccupied spot on the floor. The subsequent action of both players determines whether or not either one makes a foul.



SITUATION II

1 passes to 3 and moves to a position close beside X-2. As 2 breaks, X-2, in an attempt to follow, may collide with 1. The coaches voted that as long as 1 simply stands in his new position that he has performed a legal screen.

The note under Situation I applies here with equal force.

The first day of the convention was devoted to an address by Howard Ortnor of Cornell University, president of the Association; reports of the secretary-treasurer and by the chairmen of the standing committees; an interesting account by Dr. F. C. Allen of Kansas on the steps by which his special committee succeeded in placing basketball in the 1936 Olympic

Games; introductory reading of proposed rule changes; and closed with a demonstration game at Loyola University gymnasium between De Paul University of Chicago and Illinois Wesleyan College of Bloomington.

Clinical game

Only about ten minutes of this exhibition were played under the 1935 rules. No score was kept, and the teams hardly had an opportunity to feel each other out when proposed rule changes were introduced and a clinic on interpretations was started.

During the short time of regular scrimmage De Paul's play was featured by exceptional skill in ball handling in which deception, accuracy and speed were well balanced. Each player was able to execute all types of plain and fancy passes with ease. Offensively the team tried for a fast break every time the ball was recovered. If this attack failed a set type of offense was used in which both the ball and all players were constantly in motion. The formation consisted of a man near the basket who, however, could hardly be called a pivot post as he seldom came to rest, but shifted into and out of the freethrow area according to the location of the ball. The other four were spread in a semi-circle in front of the defense and continually maneuvered in a cross-court interlacing manner with occasional cuts towards the basket. Although the opposing defense retreated deeply, De Paul attempted very few 15 or 20 foot shots even when unhindered. On the few that were tried a marked hesitancy was shown, and all were inaccurate.

Upon losing the ball De Paul employed a spread man-to-man defense with the front line men often crossing into the back court to hinder the ball holder. When opponents were able to bring the ball into close scoring range De Paul quickly converged into a compact formation near the basket where their play took on some zone defensive characteristics.

Illinois Wesleyan, while perhaps not so adept in fancy passing, possessed sound ball handlers who specialized in a hard driving attack. Team motion, as a whole, was towards the basket in as direct a line as possible with changes of pace rather than of direction. A single pivot post scheme was used with two or three men alternating in the pivot position. One of these would rush into the freethrow circle; hesitate a second to see if a pass was coming; and then vacate for a teammate. The post largely was used as a passer, but did not hesitate to turn and shoot if his guard was not alert. Wesleyan started with a semi-

spread defense, but on finding that this could not cope with De Paul's fine passing, quickly dropped back into a compact group inside the free-throw circle.

The first rule adaptation after this short scrimmage consisted of painting new end lines six feet behind the backstops. Several times an offensive player ran into this area, but his guard realized that he was not a potential scorer and promptly ignored him to help on more dangerous men. Except for a slight reduction in the number of out-of-bounds balls at the end the new location for the lines did not appear to affect play materially.

Modification of the center jump using the Pacific Coast rules was attempted next. After a goal was made the team scored upon quickly retrieved the ball, stepped out of bounds, and started a fast break. Play took on a "race-horse" complexion, with fast and exhausting moves. Coaches who had tested this change in several games insisted that the trial was too short to be fair, and that before one half was over the players would adjust themselves to the new condition.

Tests of officiating judgment and alertness were tried in which illegal stunts by the pivot post and his guard were demonstrated. After a short whispered conference between these two players a scrimmage was started during which one or the other tried to get away with some shady foul. The officials were too alert and efficient, and by their quick and accurate decisions showed that much of the difficulty on the pivot post play which had been reported must have been the fault of officials.

The demonstration closed with a few minutes of play in which the pivot player was required to stand in the half of the free-throw circle nearest mid-court. From this position there appeared no need for either man to crowd, and more room was provided for offensive men to pass and cut since congestion under the rim was reduced. The test indicated that such a change offers great possibilities for improving the game.

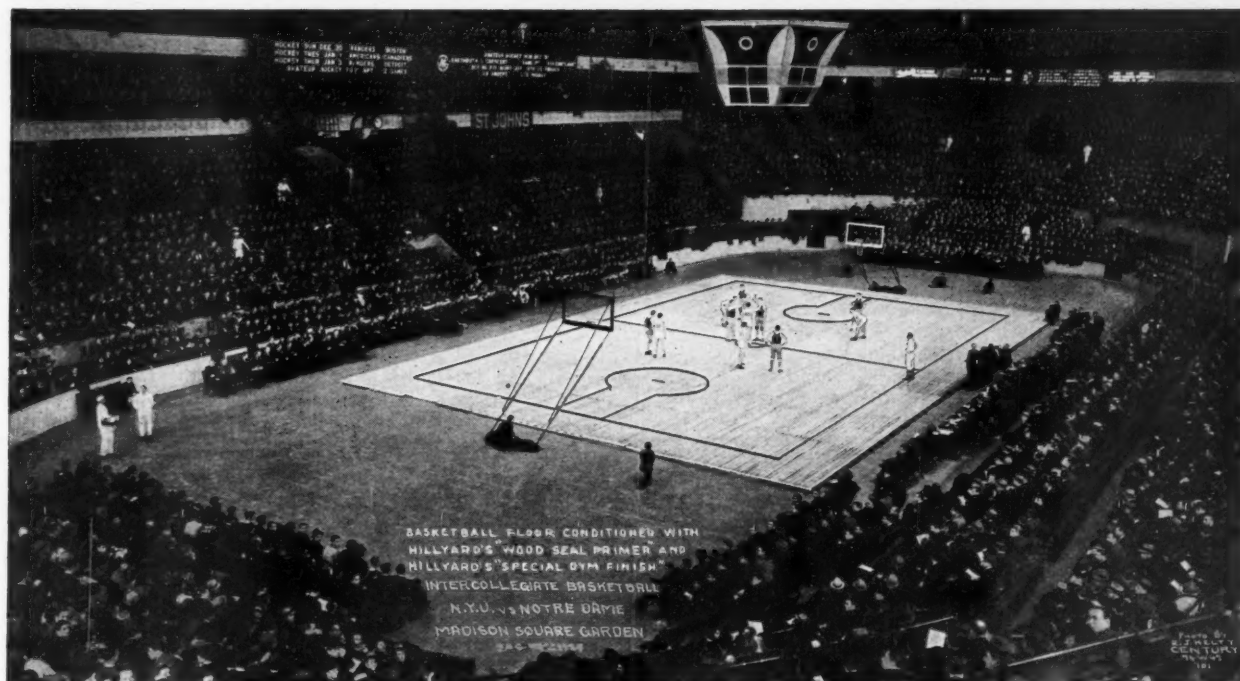
To produce film

Technical phases of basketball took up the second day's program. Harold Olsen of Ohio State, with the help of a group of coaches from each section, conducted an Officiating Panel as a means of arriving at more uniform intersectional interpretations.

As a result of this panel the Association decided upon the use of motion pictures as an educational means to standardize rulings. A Visual Interpretation Committee, headed by Dr. H. C. Carlson of Pittsburgh, was

[Concluded on page 40]

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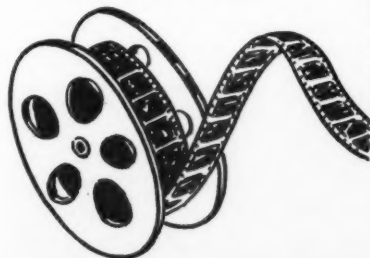


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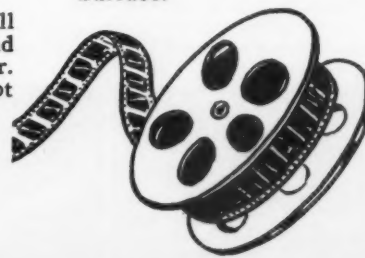
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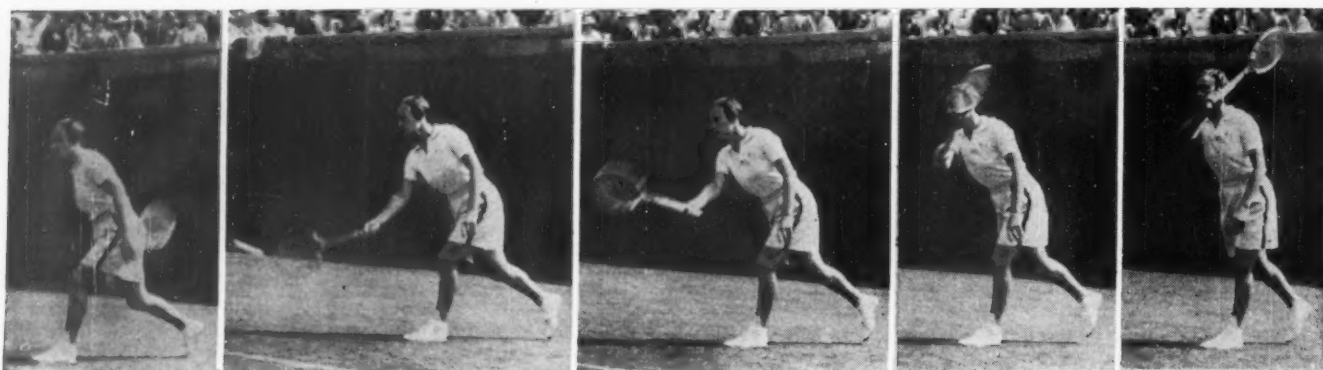
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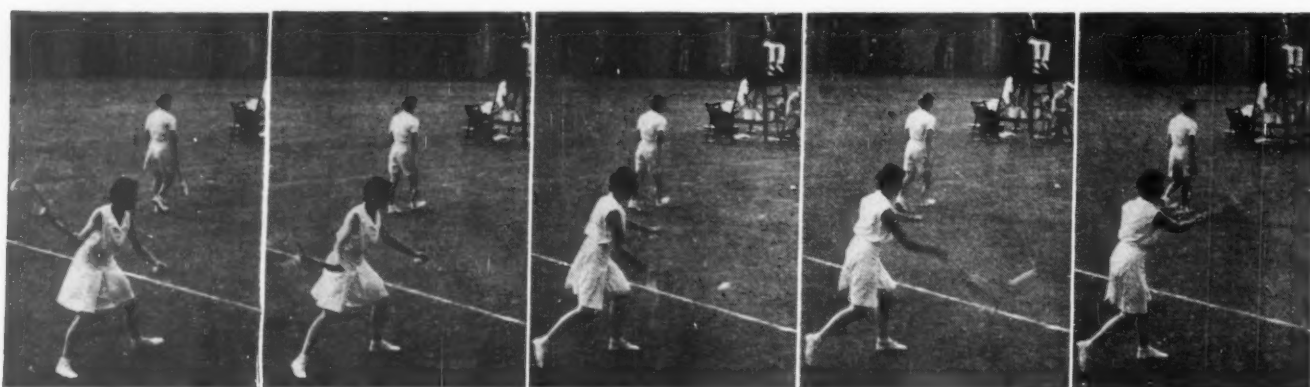
FOUR NOTED WOMEN PLAYERS

MARJ. PAINTER
ELIZABETH RYAN



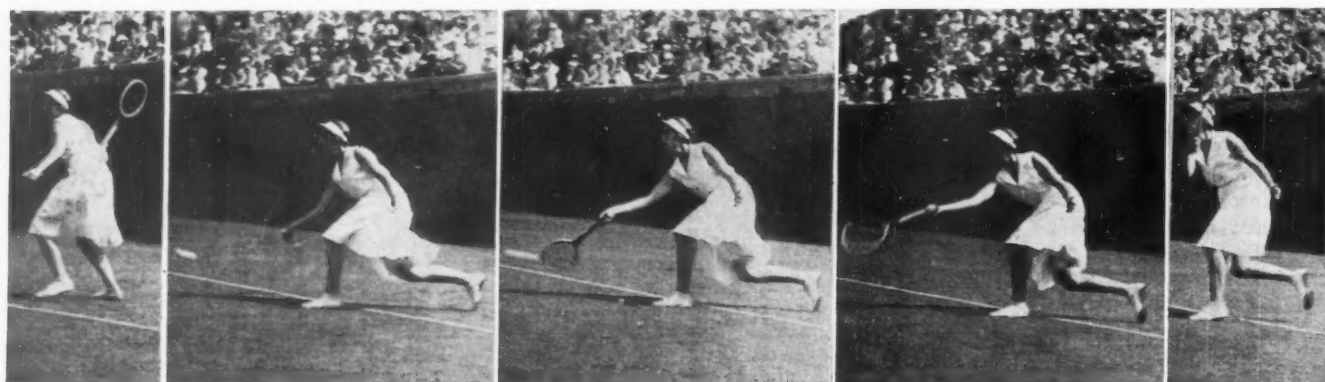
Above—The first woman player of the United States: Helen Hull Jacobs of Berkeley, Calif., playing a low forehand in the 1934 national championship final in which she defeated Sarah Palfrey

Fabyan (below) Miss Jacobs won title for the second time in 1933, winning the final from Mrs. Helen Wills Moody, who suffered the injury to her back which kept her out of tennis until just recently.



Above—The second ranking player of the United States: Sarah Palfrey Fabyan of Cambridge, Mass., hitting a forehand for which she is perfectly set. The transfer of weight to the rear foot and then

to the front as the racquet comes forward is well illustrated. This film was made during the national doubles championship in which Mrs. Fabyan teamed with Miss Jacobs to win that title.



Above—Marjorie Morrill Painter of Dedham, Mass., seventh in the national ranking, fourth in 1932 and second in 1930. The timing of Mrs. Painter's approach to this shot was late, and it has caused her

to make an extreme stretch to play it. The start of Mrs. Painter's stroke, as with that of Mrs. Fabyan's above, shows the far back-swing which contributes much to the length and speed of the drive.



Above—Elizabeth Ryan of England and California, indisputably the greatest women's doubles player in the history of the game, chopping the head off the ball during the 1934 U. S. national cham-

pionships at Forest Hills. Through the past two decades Miss Ryan has teamed with many of the game's most famous players to win doubles championships on the courts of Europe and America.

PIVOT-PLAY, CENTER-JUMP RULES ALTERED

CURTAILMENT of the influence of the pivot player and elimination of the center ball after successful free throws are the most consequential of the many changes made in the basketball rules for the 1935-36 season by the National Basketball Committee at its annual meeting in New York last month.

The pivot player, around whom a storm has been brewing for a number of years now, will be permitted in the free throw lane not more than three



This will occur less frequently

seconds at a time, whether or not he has possession of the ball. No player will hereafter be permitted to occupy a position in the lane nearer his own goal, regardless of which way he is facing, for longer than three seconds, with the exception that players in the lane who are trying for a loose ball are not subjected to the rule at that time.

A summary of all the changes, with comment, follows:

1. In marking the floor it is recommended that on floors where the space out of bounds is limited there be a dotted line around the entire court three feet inside of the boundary lines. Also the partial circle at the free throw lanes should be completed by drawing a two-inch dotted arc across the lane.

2. The use of division lines is made mandatory for courts less than 75 feet in length. Heretofore this has been recommended.

3. Slight changes in wording are to be made so that the use of the full double referee system will be encouraged. At the present time the terms "referee or umpire" are used in a number of places where these terms should be replaced by the term "official."

4. The officials will be given authority to place players during a jump ball in case there is jockeying for positions. This authority has been assumed by most good officials during the past few years. However, there was nothing in the book which actually gave them this authority. In case

the authority is exercised players may be instructed to hold definite places on the floor until the ball is tapped.

5. There will be slight changes in the rule dealing with the starting of a dribble. The new rule will be more liberal so that tapping a rebound will not constitute the start of a dribble. Also certain fumbles or other cases of tapping a free ball will not constitute the start of a dribble. The matter of control will be a determining factor. The reason for this change is that it is a common practice for players to tap certain free balls such as rebounds in the attempt to get the ball away from a mass of players. During such procedure it is often difficult to tell who last tapped the ball, and if a player has been able to secure possession after the tap and then start a dribble toward a corner or the center of the floor it is common for an official to allow the play even though heretofore the rules have prohibited it.

6. The intermission between halves of games played in 20 minute halves is to be 15 minutes. The chief reason for this is that in a number of field houses the dressing rooms are a considerable distance from the playing floor and the longer rest period is considered desirable. Also there is a growing practice of arranging for some sort of entertainment between halves of a game and it seemed desirable to allow a few extra minutes for such entertainment.

7. Teams are to be notified three minutes before the beginning of each half. Heretofore such notification has been required only before the start of the second half.

8. Certain slight changes in wording will make it clear that each half is always to be started by a jump ball at center. In case there is a foul before the game or during the intermission between halves the free throw is to be awarded before the start of the half.

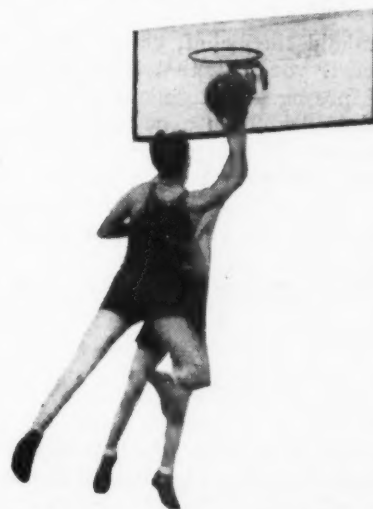
9. Whenever there is a jump ball at the free throw line the lane circle is to be used as a restraining line for all players except the jumpers. No player will be allowed to touch or cross this restraining line until the ball has been tapped. Failure to comply will be a violation. There are several reasons for this rule change. It is a concession to those people who believe that all jumps should be in an area surrounded by a restraining line in order that crowding will be avoided. Since many of the jumps occur in the vicinity of the free throw lanes it was felt that this would offer a good opportunity to determine the effect of restraining lines. It was also felt that the use of the restraining lines at these points would tend to alleviate the crowding that exists around the free throw lanes.

10. Another change deals with the method of putting the ball in play after a successful free throw for a personal foul. In all cases where the ball would, in the past, have been taken to center after a free throw following a personal foul, the ball is now to be awarded to the opponent of the free thrower out of bounds at the end. Time is to start when the ball crosses the boundary line on the throw-in. This measure was adopted in order to allow a good trial of the method of putting the ball in play other than by a center jump. There is a widely growing sentiment that all cen-

ter jumps should be eliminated. This is partly due to the fact that many people believe that too much importance is placed on the ability to secure possession of the ball through having a tall jumper. It is estimated that the new rule will eliminate 12 to 15 of the center jumps. According to statistics there will still remain about 35 jumps during a game. This elimination of approximately one-fourth of the jumps will give players and spectators an opportunity to determine through actual observation whether they desire to have all center jumps eliminated. It will also result in less waste time between the completing of a successful free throw and placing the ball in play. There is a slight possibility that some teams will intentionally foul near the close of a period in order to get possession of the ball after a free throw. However, the difference created by the new rule is slight in this respect and it is not probable that the rule will be abused.

11. A slight change in the rule relative to jumping in the center circle will provide for the case where a player steps on or across the dividing line of the circle. This situation is treated the same as assuming any other illegal jumping position and the penalty will be a variable one depending on the circumstances. The official will be given authority to call this a violation.

12. Probably the most drastic change is in connection with the pivot-post play. The new rule will be such that the three-second period will apply to any offensive player in his free throw lane. No such player will be allowed to remain in the lane for more than three seconds unless he is trying for a loose or free ball. The administration here will be the same as that for the ball holder in the past. It is not designed to prevent the com-



This man will be less dangerous

pletion of rapid-moving offensive plays. It is designed to prevent the jockeying for positions in the lane. In certain sections of the country this jockeying for positions has resulted in considerable trouble for officials. This is especially true in localities where considerable contact is allowed. Officials have been unable to determine which player is respon-

[Concluded on page 36]



THIS CAPTAINING BUSINESS

By Douglas A. Fessenden

Mr. Fessenden is coach of football and track at Fenger High School, Chicago. His idea of what a football captain should be is contained in the following article, which he wishes to preface with the remark that in the ten years he has coached high school teams he has had only one captain who even approached these standards.

HERE has been a growing tendency—a lamentable one I think—on the part of high school football coaches to dispense with the time-honored custom of electing a captain. Why take the chance, these coaches reason, of being irredeemably committed to the use of a poor field leader when you can get around the situation by the simple expedient of appointing the boy you feel is best fitted for the job; and if your judgment proves to be wrong, discarding him and appointing another?

I hold the belief, call it old-fashioned if you will, that it is the players' prerogative to name their own field leader. It is a gesture of confidence on the part of the coach in his players to permit them to elect the one who shall lead them during that time when the coach is powerless to act.

The possibility of the players' electing a captain who is not the member of the team best fitted to serve in that capacity is, of course, present. But it is a chance that is worth taking for the sake of having a captain of the players' own choice. And, it seems to me, that coaches who discard the custom of having elected captains and substitute for it the practice of appointing and dismissing captains as they see fit, are either overlooking the possibility of educating a player to the job of captaining, or are unwilling to take on the work of teaching and training that such education would require. The player who is permanently in the captain's saddle for one year is in a much better position to be educated in the difficult business of cap-

taining than one who is an appointed captain uncertain as to when he will be asked to dismount in favor of another.

By reason of his inexperience at the job, the boy who comes into the captaincy of a high school team is usually unprepared for assuming his new responsibilities. Whatever his latent talents, they must be brought out and properly developed. Even the so-called inherent quality of leadership can be used to bad ends.

The coach should begin the education of the captain as soon as he is elected. The job has three divisions:

1. Off-field leadership. An all-year job.
2. Practice field leadership.
3. Game leadership.

As the captain is usually elected at the end of a football season, the coach should start then to educate him as an off-field leader.

Off-field Leadership

The captain is the coach's contact man. His relationship with team members and prospective team members is necessarily more of a confidential nature than is the coach's. Whereas the coach may be very close to his boys, he can never become one of them. He may guess what they are doing and thinking, but he never really knows. The captain does; he must lead action and thought into wholesome, enthusiastic channels. As a go-between, he conveys to the coach the point of view of team members; to the boys, the coach's slant on things. He not only represents the team members in their relationships with the coach, but also in their relationships with the academic faculty. The point of view of a sound captain, tactfully expressed, can sometimes keep a mischievous athlete out of trouble. Moreover, principals have a tendency to judge en-

tire squads by the conduct of the team captain.

I like to make certain parts of the captain's job specific:

1. To keep in constant touch with all football players and be ready to report on any one of them.
2. To set an example in scholarship for the entire squad.
3. To be a good school citizen.
4. To be constantly on the look-out for new material. This is especially important in large schools.
5. To avoid any act that would permit a suspicion of growing ego.
6. Two hours study a week on rules. A weekly conference with the coach on rules and game strategy.

Practice Field Leadership

On the practice field the captain has no real authority. He should understand this. Much dissention and hard feeling may be caused by an officious and over-zealous captain. He functions by example only. Occasionally the captain, by virtue of exceptional leadership qualities, may be permitted to assist the coach in arranging set-ups, getting the squad in line, etc., but as a general rule it is best to make the captain just another player on the practice field.

Once the squad leaves the field the captain should be held responsible for the training habits of the squad. If Pete Smith is smoking it is the captain's job to see that Pete stops. If Frank Blitz and Oscar Nelson have a misunderstanding that threatens the harmony of their play it is the captain's job to straighten it out. If Ed Holmes is getting to bed long after hours the captain must point out to him that this is hurting the team. However, only in extreme cases should the captain come to the coach with these troubles. [Continued on page 30]

Mechanics of the Broad Jump

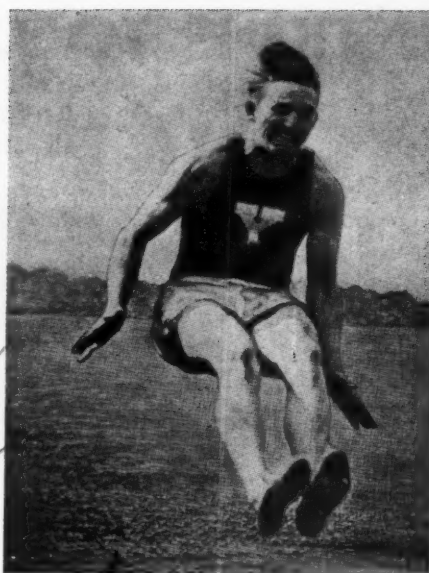
[Continued from page 9]

of the calf, thigh and shoulders at the time of the take-off (4) that heavier bodies are harder to project (5) that the speed of the run is very important in developing a high value of take-off velocity.

The Flight of the jumper's body follows the course of a parabola. The projection energy or velocity of flight cannot be changed after the jumper leaves the ground. The "hitch-kick" does not increase the momentum during flight. It should be remembered that a movement of limbs in any direction will have an opposite reaction on some other part of the body. Running movements with the legs are useless when made in free air. The legs cannot develop resistance enough against air to cause any appreciable change in the force of projection. Inertia effects are present but these act to rotate the limbs or body about the center of gravity, i.e., bringing the arms sharply forward and upward will roll the body over backwards into a somersault unless compensating movements are made with the legs. This is done and the trunk remains on an even keel. The arms brought downward from an overhead position will be compensated for by the legs being raised forward in front of the body.

The 15, 20 and 25 foot jumps require the center of gravity to be raised above the ground 3.76 feet, 5.00 feet and 6.25 feet, respectively. *Here it is shown that for a jumper to jump far he must also be able to jump fairly high.* A coaching technique is needed to check upon the height and angle of take-off. For a given speed capacity in the approach the direct objectives are to take off at 45 degrees and to jump high enough to carry the distance. These two aspects are, of course, related. Jump the ideal height for the distance and the angle will be correct. This requires ability on the part of the coach to spot the center of gravity at the peak height. Some coaches have used strings across the pit at the half distance point as an aid.

The Landing. The position of the feet and legs in landing is very important. The legs should be thrust as far forward as possible and still permit the balance to be held. Falling backwards ruins the jump. Bending at the waist and knees at the time of contact permits rolling forward rather than falling backward. Illus. III shows a good position.



Illus. III. Landing Position
(Courtesy American Sports Pub. Co.)

Note the position of the out-thrust feet. This sort of a landing will give the jumper every possible advantage. Most jumpers land with one foot slightly behind the other. Note also that the legs are fully stretched forward. This finish will develop an additional foot in distance. The body is in position to roll forward with the impact. To make this sort of a landing the jumper must learn to break at the knees and allow the body to come forward so that the bulk of the weight will be ahead of the feet. Otherwise the jumper will lose his balance and in that case he will fall back, behind his heel marks. (From "College Athletics," 501B of the Spalding Athletic Library.)

Experimental Check-up of a Jumper

The coach does not have time to analyze every candidate on his squad. However, it would be better if more coaches were able to measure by means of cinematographical analysis the few jumpers on whom they are concentrating to bring to the peak. A sample of such analysis is given as taken in connection with the applied physics course at Springfield College.

A subject was measured who had been doing poorly in the broad jump for a number of years. It was uncertain whether the take-off angle was consistently off or whether his running speed in the approach was too slow or whether the check at the block was too great and markedly lowered his take-off velocity. It was also desired to measure the height of the jump.

Results showed that the take-off velocity was 16.79 ft./sec., the time of flight .72 seconds and the angle of take-off 23 degrees. These measurements were made directly from the center of gravity rather than from the ground. The distance of the jump was computed with a correction for the body to fall to the ground from the original height of the center of grav-

ity. The actual measured distance was 13.27 feet and the computed distance 13.76 feet. The per cent error of this calculation is 3.7%. This means that the actual distance of the jump was computed to 96.3% accuracy as a check on the precision of the measurements.

In the jump just described the subject was capable of running 25 ft./sec. The check at the block reduced the take-off velocity from 25 ft./sec. to 16.79 ft./sec., which is a reduction of 32.8%. A perfect take-off for this velocity would have given a jump of 16.5 feet. In other words, the jumper lost 3.23 ft. by checking at the block. The angle of take-off was very low, 23 degrees, instead of 45 degrees. This caused a loss of efficiency. It is estimated that this jumper could have improved his jump with improved form at the take-off with respect to take-off angle and projection velocity. His take-off velocity is too low and his running speed limits his capacity. Improvement of running speed would still further increase the capacity. In such a way the coach could put his finger on the major difficulties of his best jumpers.

Most fast sprinters can be made into effective broad jumpers. This is witnessed over and over again. For instance, Jesse Owens developed as a great sprinter capable of doing 9.4 seconds for the 100 yard dash. Just a few days ago he broke the American broad jump record with a leap of 26 ft. 13 1/4 in., the first time an American had reached 26 feet. The significance of running speed is very great in broad jumping. It indicates the power capacity of the individual. Every broad jumper should develop through practice the form which would give performances up to maximum power capacity.

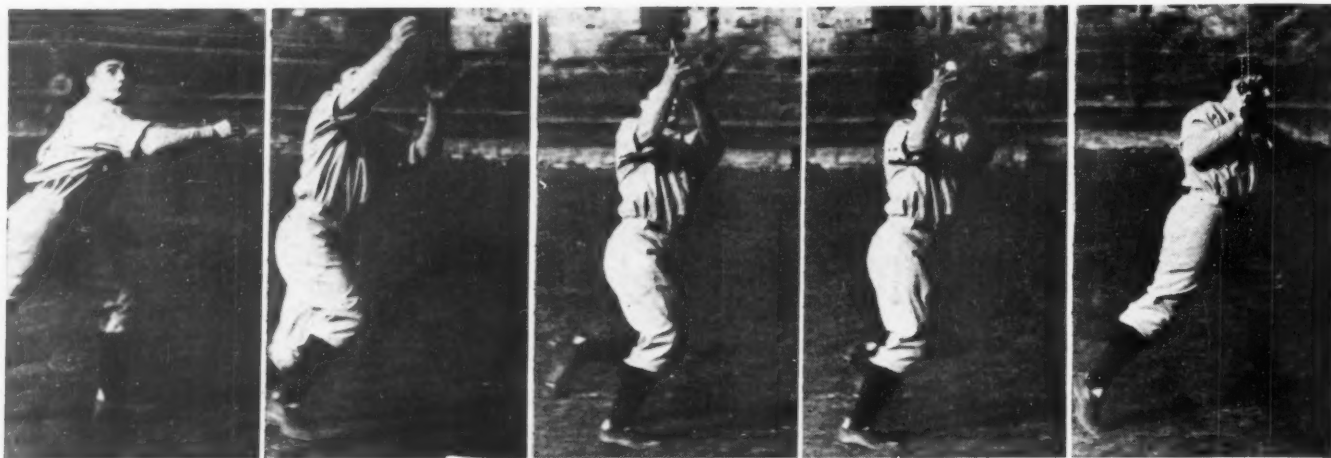
There are examples of great sprinters, such as Paddock and Wykoff, who were not known as jumpers. The chances are certainly great, however, that these men could have been developed into superior broad jumpers by a competent coach who employed the correct principles of mechanics.

There is a temptation for some coaches to suggest that all men are different and that there are so many variables in the human equation as to defy complete identification of them. One is surprised, nevertheless, to find how closely the performance of any jumper will follow the usual mechanical laws. Such a realization only emphasizes the need for more mechanics in the education of the physical educator and coach.

COACH'S INSTRUCTIONS TO OUTFIELDERS

By H. S. DeGroat

An intelligent fielder keeps in mind all the possibilities of every play



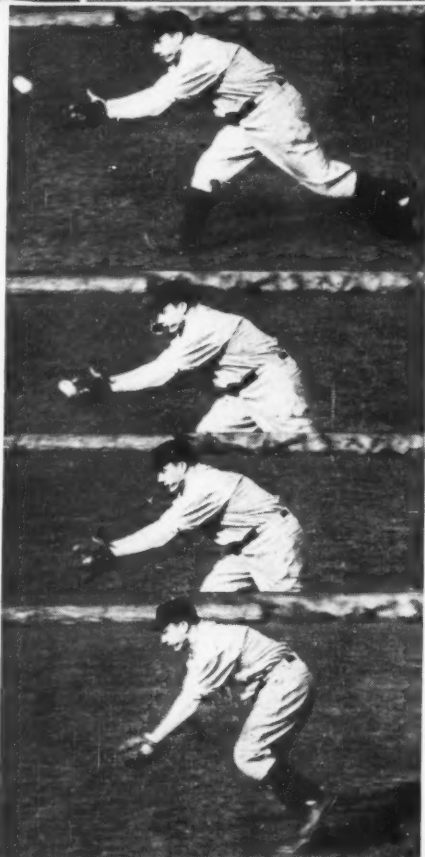
Mr. DeGroat, baseball coach at Springfield College, Springfield, Mass., has adapted this article from his booklet on Outfielders in his "Baseball Coaching Aids" series.* This article is in the form of a coach's talk to the outfielders.

THE qualifications we look for in outfielders are ability as dependable hitters, speed in covering their territory, speed on the base-lines, a good throwing arm, and the ability to field both ground and fly balls equally well. Weakness in any one of these qualifications may mean the difference between being a regular on the team and a regular on the bench.

SHIFT YOUR POSITION

Bear in mind certain definite things as you take your positions in the outfield. Remember that you play to the batter's strength, but that our pitcher pitches to the batter's weakness. Shift

*Just issued. The set of six booklets, punched to fit loose-leaf binders, cover (1) Battery-men, (2) First Basemen, (3) Second Basemen, (4) Short Stops, (5) Third Basemen, (6) Outfielders, (7) Signal System. Springfield College, Springfield, Mass., H. S. DeGroat. \$1 for the set, including two copies of each booklet.



Above—Making the turn after a run-back to catch a deep fly over the right shoulder with cupped hands.

your position in the outfield according to these things: First, the style of batter, right- or left-handed. Second, if he is a left-field hitter, play him that way. If he is a right- or center-field hitter, bear that in mind. If he is a hard hitter, play deeper. If he punches out his hits, play shorter. Third, play according to the ball being pitched. Catch the signal from the second baseman or short stop. If it is a fast ball you should play deep. If it is a hook you should lean slightly, for the right-hander will be likely to hit the fast hook more toward right field, which is to your left, than when that same batter hits the fast one. He may pull the slow hook around more to your right. The left-hander will do just the opposite. On the slow ball

Left—Going in for a line drive and reaching it so that it can be handled with hands cupped (little fingers together).

Below—Parking under a very tall one, and taking it with hands cupped.



you can expect to play slightly shorter. This holds only if a true slow ball is thrown. Be sure you know what kind of a slow ball the pitcher throws. His slow ball may be a real home-run ball and not a true slow ball. Fourth, play according to the wind. If the wind is at your back, it will hold the fly balls up and drop them short. If the wind is in your face, you can expect to play deeper. If the wind is a cross wind, you must play out of your usual position, the distance out depending on the velocity of the wind; a few feet will not be enough in a stiff wind.

PLAY ACCORDING TO STYLE OF PITCHER

Play according to the style of the pitcher in the box. You must know his style if you are to play smartly. Does he have a real fast ball? If he does, you can expect the batter to be hitting his fast one late, if he does hit it. It will be very likely that the right-handers will be hitting to right field and left handers to left field. Remember that this is even more true in early season games.

If the pitcher throws slow hooks you should be expecting them to be pulled around by the batter's bat to the hitter's own field; that is, the right handers will pull them around to the left field and the left handers to right field territory.

IF PITCHER IN HOLE

If the pitcher is "in the hole," you must play deeper if he intends to groove the next ball.

PLAN AHEAD

Always plan ahead. Know the score, the outs, position of men on the bases, if any; and know exactly what you will do under the following cases: if the ball comes to you on the fly; or on the ground; if it comes to your teammate's territory on your left or right; or if a pitch-out is being made and a throw likely to be made to one of the bases.

TEAM WORK

An outfielder looks bad when he does not leave his position until the ball has gone through another player's legs. Go fast to back up your teammate, or to relay the ball if it went over his head. Call and tell him where to throw if he is catching a ball near you and there are men on the base-lines.

Collisions between outfielders is another indication of poor teamwork in the outfield. Call loudly and call early if you can get a fly that may be falling between you and your teammate. Do not call unless you can get it. If your teammate calls first, pre-

pare to back him up or to tell him where to throw after he catches the ball.

FIELDING GROUND BALLS

The best place to stop ground balls is directly in the path of the ball. You are the last defense and you cannot afford to have the ball go by you. It means extra bases and extra runs. Take the ball at the top of the bound or just as it strikes the ground. Block it with your body if necessary to keep runners from advancing and winning the game.

FIELDING FLY BALLS

In fielding fly balls you will have greater success if you act upon the following advice: Running on your toes will cause less jar and not disturb your sight on the ball. Assume a comfortable stance on each pitch that will allow a quick break to the field to which the ball is hit. If there is no one on base, take a position under the fly ball where it would hit you between the eyes. This position will allow quick adjustment to any change of direction of the falling ball.

If there are men on bases you should learn to time the approach to the falling ball so that you can hop under the ball, catch it and throw it all in one motion. Do not park under this fly and then run to get up speed to make your throw.

Follow the ball up to the edge of the sun then shift your eyes to the other edge until the ball appears. Reverse this when the ball starts down, whether or not you are wearing sun glasses.

A good outfielder can catch fly balls in nearly all positions. Let it become automatic. Practise until it becomes so, putting most time on your weakness. A common weakness among young outfielders is the fly that goes over your heads, for which you must turn and run. Keep practising on these until you can tell almost at the crack of the bat whether you will be required to retreat or advance. If you have to go far back, it will likely be necessary to turn your back on the infield and sprint at top speed. Look over your shoulder after you have gained good ground, and make the final judgment on where you will have to be to play the ball.

When you have plenty of time to get under the ball, catch it with the hands cupped, the little fingers together—the way it is necessary to catch all low balls. But if you prefer to handle the high ones with your fingers pointed up, thumbs together, do not give up the way in which you have the more confidence. Of course, there are certain line drives on which you have no choice in the matter.

SPECIAL INSTRUCTIONS

When on foreign fields always notice the following: the condition of the ground and how the ball responds on the bound to the peculiar surface; the direction of the wind; the background behind the batter so as to help you judge the ball correctly. When there is a short-field fence it is best to go back to it on any hard hit ball and move forward if necessary to catch it, rather than to be driven back into it and have the ball knocked from your hands or deflected over the top of the fence for a home run.

Unless you are smart and thinking all of the time you can pull a bonehead play such as catching a long foul fly with a runner on third and less than two out.

WHEN TO PLAY A SHORT POSITION

The last of the ninth, with the winning run on [Concluded on page 40]



Shoestrings

Action photographs on these two pages posed by Al Barabas, Columbia.

Over the Field

This department is conducted by Hyman Krakower, Ph.D., a member of the staff of the Department of Hygiene, College of the City of New York.

THIS month we take up two more of the better known physical achievement tests. In previous issues there appeared descriptions of the *Badge Test* of the National Recreation Association (January, 1935, *Scholastic Coach*), the *Physical Fitness Index* devised by Frederick Rand Rogers (March, 1935), and H. Leigh MacCurdy *Physical Capacity Index* (March, 1935).

The *Achievement Scales in Physical Education Activities** developed by Neilson and Cozens of California will be taken up in this department next fall. For the present we will confine the discussion to the set of standards formulated by the National Physical Achievement Standards Committee of the American Physical Education Association and the one embodied in the Physical Achievement Program of the Pittsburgh, Penna., high schools.†

These two sets of standards differ in that the former is an attempt to formulate a national set of standards,

while the latter is based on localized conditions. The method of classification is superior in the latter test, in that a finer break-down is possible. In the Pittsburgh tests, a four-point classification is used: grade in school, age, height, and weight. (See classification tables, opposite page.) Achievement scales, running from one point to one hundred points, give the student a picture of his own class performance that he can compare with those of other students.

Comparisons like this can not be made in the same way in the National Standards because the latter tests are based only on success and failure. It is not known how high a student passes, or how poorly he fails. Another weakness of the National Standards is found in the large gap between divisions, a two-year age range. For example, a student 16 years of age, successfully meeting the requirements of the *senior division*, has no further requirement to meet, although the division age range is from 16 to 19 years. If there were standards for each age group, or scores based on point scales, incentives would be provided for fur-

ther participation. It has long been recognized that age alone is insufficient for classification.

The Pittsburgh program

The Pittsburgh Physical Achievement Program for Boys, administered by C. Lawrence Walsh, supervisor of the Division of High School Physical Education of the city of Pittsburgh, through a committee representative of the various high schools and headed by Chester Smith of Perry High School, calls for 17 events in the senior division, 16 in the intermediate and 15 in the junior:

Events	Junior Division 75 yards	Inter- mediate Division 100 yards	Senior Division 220 yards
Dash	x	x	
Potato Race			Potato Race or Cross Country Run
Running Bases	x	x	x
Shot Put—8 lbs.	x	x	x
Mushball Throw	x	x	x
Punt	Soccer	Soccer	Football
Pull-Ups	x	x	
Rope Climb	x	x	x
Running Broad Jump	x	x	
Std. Hop, Step & Jump	x	x	x
Basketball Goals	x	x	x
Swim—40 yds.—Free Style	x	x	x
Front Dive	x	x	x
Baseball Throw	Optional	Optional	
Running High Jump	Optional	Optional	x
Plunge		x	x
Football Throw			x
Bar Vault			x
Std. Broad Jump			x
Shot Put—12 lbs.			Optional

The following is a suggested schedule for working the events into the regular physical education program:

During	Practice	Take Test
September	Punts	October
September	Football Throw	October
September and October	Cross Country	November
October and November	Apparatus & Stunts	December
October and November	Bar Vault	December
Oct., Nov., and Dec.	Pull-Ups	January
December and January	Basketball (30 sec.)	February
January and February	Potato Race	March
January and February	Rope Climb	March
September to March	Swimming, Diving, and Plunge	April
March and April	Dashes	May
March and April	Baseball Throw	May
March, April and May	Shot Put	June
March, April and May	Jumps	June
March, April and May	Base Running	June

The events in the program satisfy the basic physical requirements of the body—running, jumping, throwing and hanging; and desirable derivative activities. The program lays the emphasis upon all-round development, at the same time securing the advantages and none of the disadvantages of specialization. The inclusion in the program of a scoring table or scale for each event is the method used to secure these results. The classification table originally adapted in 1922, was based on the system of classification suggested in the study made by the Committee on Physical Efficiency Tests of the American Physical Education Association (1920). This sys-

**Achievement Scales in Physical Education Activities*. A. S. Barnes and Company, New York.

†Both tests are for boys. National physical achievement standards for girls are being developed by Amy Howland of Mt. Vernon, N. Y., High School.



Photo by Gendreau

Classification Tables for Pittsburgh Physical Achievement Program

The classification of pupils is determined at the beginning of each pupil's "B" semester and holds good throughout such pupil's "B" & "A" semesters.

TABLE No. 1—JUNIOR DIVISION—SEVENTH AND EIGHTH GRADES

EXPONENTS	4	5	6	7	8	9
GRADE		7B	7A	8B	8A	
AGE	Up to 12 yrs.	12 yrs. 1 mo. to 13 yrs.	13 yrs. 1 mo. to 13 yrs. 6 mo.	13 yrs. 7 mo. to 14 yrs.	14 yrs. 1 mo. to 15 yrs.	15 yrs. 1 mo. or over
HEIGHT	Up to 4'4"	4'5" to 4'8"	4'9" to 5'	5'1" to 5'3"	5'4" to 5'6"	5'7" or over
WEIGHT	Up to 74 lbs.	75 to 89 lbs.	90 to 104 lbs.	105 to 119 lbs.	120 to 134 lbs.	135 lbs. or over

TABLE No. 2—INTERMEDIATE DIVISION—NINTH AND TENTH GRADES

EXPONENTS	4	5	6	7	8	9
GRADE		9B	9A	10B	10A	
AGE	Up to 14 yrs.	14 yrs. 1 mo. to 15 yrs.	15 yrs. 1 mo. to 15 yrs. 6 mo.	15 yrs. 7 mo. to 16 yrs.	16 yrs. 1 mo. to 17 yrs.	17 yrs. 1 mo. or over
HEIGHT	Up to 4'6"	4'7" to 4'10"	4'11" to 5'2"	5'3" to 5'5"	5'6" to 5'8"	5'9" or over
WEIGHT	Up to 84 lbs.	85 to 99 lbs.	100 to 114 lbs.	115 to 129 lbs.	130 to 144 lbs.	145 lbs. or over

TABLE No. 3—SENIOR DIVISION—ELEVENTH AND TWELFTH GRADES

EXPONENTS	4	5	6	7	8	9
GRADE		11B	11A	12B	12A	
AGE	Up to 16 yrs.	16 yrs. 1 mo. to 17 yrs.	17 yrs. 1 mo. to 17 yrs. 6 mo.	17 yrs. 7 mo. to 18 yrs.	18 yrs. 1 mo. to 19 yrs.	19 yrs. 1 mo. or over
HEIGHT	Up to 4'8"	4'9" to 5'	5'1" to 5'4"	5'5" to 5'7"	5'8" to 5'10"	5'11" or over
WEIGHT	Up to 94 lbs.	95 to 109 lbs.	110 to 124 lbs.	125 to 139 lbs.	140 to 154 lbs.	155 lbs. or over

METHOD OF USING ABOVE TABLES

The Grade of the pupil determines which of the three tables shall be used. The following examples will show how the calculation is done:

A pupil in the 9-B grade is 15 years 9 months old, 5 feet 1 inch in height and weighs 130 lbs. His grade (9B) shows that Table 2 (Intermediate Division) shall be used. So,

His Grade Exponent is..... 5
His Age Exponent is..... 7
His Height Exponent is..... 6
His Weight Exponent is..... 8

The sum of his Exponents is..... 26

The next step is to determine the class of the pupil by the use of the following scale:

Class	Sum of Exponents
A.....	Up to 21 inclusive
B.....	22 to 25 "
C.....	26 to 29 "
D.....	30 to 33 "
E.....	34 or over

The sum of the pupil's exponents being 26, his class is indicated as "C." However, when a pupil's Weight Exponent is two points higher than his Height Exponent, such weight handicap is partly eliminated by reducing the Class one step. In the example given the Weight Exponent being 8 and the Height Exponent being 6, the Class is reduced from "C" to "B."

tem of classifying considers the factors of height, weight, age and grade (school progress), and is an attempt to arrive at "physiological age," or physical development classification.

The present scoring tables, for the events itemized above, are constructed on the differential basis. This recognizes the fact that it becomes increasingly difficult for a performer to make improvement in any event as he approaches the best human performance recorded for such an event by high school students (United States Inter-scholastic records). This therefore necessitates an occasional change in the scoring charts.

Each boy is provided with a special record card upon which he places all his data. This card is kept for a period of two years. These cards are to be in the boy's care and contain a copy of the official record, which is kept by the instructor. When all events have been completed the students qualifying or satisfying the requirements present their cards to the instructor for checking and for his signature.

The events set up are not tests, but objective stimuli set up to encourage various types of physical activity, and the development of certain desirable skills. The actual recording of the score in any event should be merely the culmination of the real program in such an activity.

Classes organized into groups or squads for regular work, with leaders in charge, constitute the best method of conducting these events.

Standards have been set up in three divisions; junior, being the seventh and eighth grades; intermediate, being the

ninth and tenth grades; and the senior, consisting of the eleventh and twelfth grades. Within each division are five classes, A, B, C, D and E, which are determined from the exponents derived from the pupils' grade, age, height and weight, according to the Classification Tables (page 19).

Each student is required to meet the standards set for his particular division and class. Boys failing to meet their individual standards the first year in the various divisions, are required to repeat the program the succeeding year. Boys meeting the standards the first year in the various divisions are not required to participate in the program in the following grade, but may voluntarily do so in order to strive for higher achievements and scores.

Keys and pins are awarded to the three highest scorers in each of the three divisions in each school; all others securing a card signed by the instructor stating that the individual had qualified.

A.P.E.A. National test

A national committee of outstanding leaders in the field of physical education were chosen by the American Physical Education Association to study the formulation of national physical achievement standards. After four years of experimentation and investigation, standards suitable for boys from 8 to 20 were adopted.* Herewith are listed the tests suitable

for boys of junior and senior high school age:

INTERMEDIATE DIVISION (Ages 12 and 13)

Established for 50 percent to pass

Group I—Game Skills

1. Football goal-place kick 2 out of 5 at 45 ft.
2. Baseball target throw... 3 out of 6 at 25 ft.
3. Basketball goal shooting 5 in 25 seconds
4. Tennis serve 3 out of 6 trials
5. Catching place-kicked football 3 out of 5 trials

Group II—Track and Field

1. 100-yard dash 14 seconds
2. Running broad jump... 12 feet 4 inches
3. Running high jump... 3 feet 10 inches
4. Baseball throw 160 feet
5. 220-yard run 33 seconds

Group III—Gymnastics

1. Rope climb, 16 feet (hands and feet) 9 seconds
2. Hand stand 3 seconds
3. Running vault over bar or fence 4 feet
4. Hanging between ropes, turn backward and return.
5. Forward head spring.

Group IV—Water Sports

1. Swim 180 yards
2. Recover 5-lb. object, by surface dives in 8 feet of water 2 out of 5 trials
3. Swim 40 yards free style 37 seconds

[Concluded on page 39]

*A copy of the Standards may be obtained from the National Physical Achievement Standards Committee, 315 Fourth Avenue, New York City, for 10 cents.

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Richmond	Mississippi
Chicago	Oklahoma
Illinois	Kansas State
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The Physiology of Athletics

Emotions and Feelings

By Peter V. Karpovich, M. D.

THE crowd on one side is roaring "Hold that line! Hold that line!" The visiting team presses hard and is dangerously close to the home goal. A whistle blows. The coach is sending some fresh forces into the fray. The men run to join their teammates. They feel proud and happy, yet nothing but a serious grim determination is written on their faces. The time is too critical. Their team has been failing and it is for them to perform a miraculous change in the game.

One more attack. The goal is not made. The players go back to their respective places. They do not smile. Every muscle is tense. They crouch, ready to spring. The divided crowd continues to shout, "We want a touch-down!" and "Hold that line!" from opposite sides of the field.

The spectators get excited if the game is close, or if there is some unusual or heroic element. And this is why football draws them to the stadium. They expect some spectacular passes, or some spectacular errors, which result in a long run and a goal. For a full enjoyment the game should be, of course, in favor of their own team. Here as in many sports involving severe body contact, such as professional boxing or wrestling, people expect some accidents. Although very few will confess this openly, they are thrilled to see players fall on the ground writhing with pain. Certainly the public pities them, the public is sympathetic, but just the same it supplies a thrill. Yet there is nothing strange or abnormal in this reaction. When we allow the emotions associated with a fight to get the better of us, we descend on our psychological stepladder to a level of savagery.

Yet without emotional displays life would become bland and uninteresting. Emotions may be called the spice of life. But just as unlimited use of spices is not wise, an excessive display of emotions has its penalties. A prima donna may pay with headaches for the outbursts of temperament, but what of those who surround her?

In certain schools the student health card contains questions concerning parents' occupation, and how long the last job has been held. These questions indicate not only the social position of the student, but also the possible cause of trouble in family life. Suppose the answer is: "Mother is giving singing lessons, mostly at home.

Father is a musician. Two months ago he lost his permanent job in a big orchestra. At present he is occupied irregularly in night clubs." Probably you have been wondering why the pupil in question was irritable, and possibly was not gaining weight normally. When the pantry is bare and the purse empty human beings begin to feel desperate and act like animals at bay. Very few people in adversity have the happy-go-lucky disposition of Micawber in David Copperfield. Most people do not take life so philosophically but become rather ugly with those who depend on them. Can you blame them? It is not a matter of blaming or judging them. Probably it is the only way they can act.

One may wonder why every emotion is expressed in a definite pattern. What is the relationship between the inward sensation and the outward expression? For a physical director this question properly answered may be of help in solving practical problems. It is impossible at this time to go into a detailed analysis of every conceivable feeling. Discussion therefore will be limited to the feeling of anger.

The exciting element in any game with a strong opposition is that of fight. This fight may be friendly or hostile, the demarcation line being very slim. Observe some puppies at play. They wrestle, they pretend to bite, they growl. To all appearance they are engaged in a friendly play. Then by chance, one of them will bite too hard. Immediately you hear an angry snarl; the offended dog snaps at the offender and the real fight begins.

The same may be observed any number of times with our own children at play. Similar observations where friendliness and animosity interchange may be encountered in ourselves. Just try to give an honest account of your own feelings upon suddenly losing your chances to win a game of golf. And what about those games that tax our physical capacities to the limit? Can you recall many games of football, basketball or lacrosse, in which nobody on the team, not even for a moment, lost his spirit of cordiality toward his opponents? We know very well that the opposite is more common and that is why we speak so much about sportsmanship, and for security we employ several referees, judges and occasionally . . . police.

Physiological changes in anger.

In describing the bodily changes occurring in a state of anger we will draw extensively upon the wealth of experimental data collected in the past twenty years, especially by Dr. W. Cannon of Harvard. Let us visualize an angry cat which is ready to fight. The animal immediately becomes tense. The back curves up. The hair stands on end. The mouth is open and the teeth are bared. The respiration is irregular, interrupted with every sudden jump. The animal snarls and sputters.

These are only the superficial signs. There are others, deep-seated ones. When the animal becomes angered, the sympathetic system becomes excited and carries messages to the various organs, mobilizing them for an emergency—the fight. All processes of no immediate importance are inhibited, and the others are augmented. The heart-rate becomes faster, so that more blood can be supplied to the fighting muscles. The blood vessels of the skin constrict. This helps to divert the blood to the more important organs and reduces also the danger of a possible hemorrhage from a superficial wound. Digestion is discontinued and excess blood is side-tracked from the intestines.

To insure a prolonged mobilization of the organism a certain glandular mechanism is used. The sympathetic system carries impulses to the adrenal glands, and they secrete an excess adrenalin. Adrenalin is an extremely powerful secretion. G. A. Dorsey gives a graphic illustration of its potency. If one ounce of adrenalin is diluted by water brought by a procession of 4,000 street sprinklers, 625 gallons capacity each, it would still be strong enough to depress the intestinal canal. Adrenalin will cause the liver to discharge more sugar into the blood, will increase the strength of the contractions of the heart and skeletal muscles, and shorten the time necessary for blood clotting. Obviously this is a remarkable adaption. A greater muscle force gives a better chance in struggle, a greater amount of sugar insures an adequate fuel supply to the muscles, and a faster blood clotting is the best first-aid in a hemorrhage.

Now look at an angry man. His face is red and distorted, and the corners of the mouth are lifted and the canine teeth are bared, as if he were going to bite. His muscles are tense, the body is slightly bent forward and the fists are clenched, ready for a strike. His heart rate is fast, the blood pressure is high, the blood sugar is increased.

[Concluded on page 29]

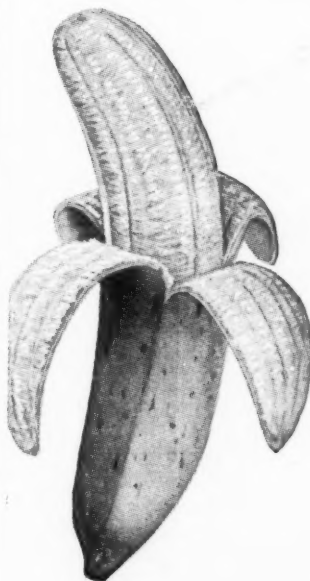
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Coaching School Directory

BUTLER UNIVERSITY—Indianapolis, Ind. Aug. 12-17. Paul D. Hinkle, director.

COLGATE UNIVERSITY—Hamilton, N. Y. Aug. 26-31. William A. Reid, director. See advertisement this page.

COLUMBUS COACHING SCHOOL—North High School, Columbus, Ohio. Aug. 26-31. Arthur C. Jones, director.

UNIVERSITY OF DENVER—Denver, Colorado. June 17-29. Percy P. Locey, director.

DUKE UNIVERSITY—Durham, North Carolina. July 15-20. Wallace Wade, director. See advertisement opposite page.

UNIVERSITY OF ILLINOIS—Urbana, Ill. June 17-July 27. Seward C. Staley, director.

INDIANA UNIVERSITY—Bloomington, Indiana. June 19-July 16. Z. G. Clevenger, director.

UNIVERSITY OF IOWA—Iowa City, Iowa. June 10-July 18; July 22-Aug. 22. O. M. Solem, director.

KANSAS STATE HIGH SCHOOL—Topeka, Kansas. Aug. 12-23. E. A. Thomas, director, 315 West 10th street.

LIEB-MEANWELL COACHING SCHOOL—Pio Nono High School, Milwaukee, Wisconsin. Aug. 26-31. E. T. Dermody, director. See advertisement opposite page.

MISSISSIPPI STATE COLLEGE—State College, Miss. July 16-27. R. P. Patty, business manager. See advertisement this page.

UNIVERSITY OF MISSOURI—Columbia, Missouri. June 10-Aug. 2. C. L. Brewer, director.

NEW YORK UNIVERSITY—Lake Sebago Camp, Palisades Interstate Park, N. Y. July 9-Aug. 16. Jay B. Nash, director.

UNIVERSITY OF NORTH CAROLINA—Chapel Hill, North Carolina. Aug. 19-31. R. A. Fetzer, director. See advertisement page 38.

NORTHEASTERN UNIVERSITY—Boston, Mass. June 24-29. Edward S. Parsons, director. See advertisement opposite page.

NORTHWESTERN UNIVERSITY—Evanston, Illinois. Aug. 12-24. K. L. Wilson, director.

OHIO UNIVERSITY—Athens, Ohio. June 10-July 6. O. C. Bird, director.

COLLEGE OF THE OZARKS—Clarksville, Ark. June 10-21. Jesse A. Pardue, director.

PENN STATE COLLEGE—State College, Pennsylvania. See advertisement this page.

SPRINGFIELD COLLEGE—Springfield, Mass. July 1-Aug. 3. Regular summer session, phys. ed. and coaching. G. B. Affleck, director.

STATE COLLEGE OF WASHINGTON—Pullman, Washington. June 17-July 12. J. F. Bohler, director.

TEXAS TECH—Lubbock, Texas. Aug. 5-16. P. W. Cawthon, director. See advertisement April issue.

TEXAS HIGH SCHOOL FOOTBALL COACHES ASSOCIATION SCHOOL—Dallas, Tex. July 29-Aug. 3. Standard Lambert, sec'y-treas.

UTAH STATE AGRICULTURAL COLLEGE—Logan, Utah. June 10-15. E. L. Romney, director.

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Board
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Write E. T. DERMODY
PIO-NONO HIGH SCHOOL
MILWAUKEE (ST. FRANCIS), WIS.

Physiology of Athletics

[Continued from page 27]

If he cannot use his muscular power in physical violence, he will at least shout angrily, will jump from his seat and will rush around. His anger has gotten the better of him. The man acts as a beast. The controlling function of the brain is temporarily suspended. From common experience we know that the best thing in this case is to leave the person alone and remove the object which provoked this emotional storm.

The previous analysis of the physiological changes in the cat explains many things that occur in an angry or even just an excited person. The absence of the appetite is due to a constriction of the blood vessels around the alimentary canal. A loss of ability to think clearly beyond the immediate present is explained by a shunting off of some brain areas. A young man may be so enraged that he will go and kill his offender. At that moment he does not care about the consequences. The standard of values is distorted. Yet when later he "cools off" he may clearly see how foolish he was.

If excessive outbursts may be so dangerous and antisocial what should we do about it? Can we do anything? Certainly we can. Comparing adults with children we notice the difference in the frequency of the emotional outbursts. Even a badly behaved adult will have fewer emotional storms than an average child. To make this more optimistic, let us compare a gentleman with a "bad boy" from the slums of a big city. And when we say a "gentleman" we do not mean a polished fashion mannequin, but an honest man with splendid self-control. A gentleman develops this self control with a constant practicing of suppression of ugliness in emotions. The element of constancy is extremely important, and it is obvious that a casual interference on the part of well-meaning parents and teachers is doomed to remain futile, unless they start a process of self-development and self-guidance in the child. Games and plays furnish a powerful means of control and self control, and may be utilized for the improvement of character.

Must Fight Against Anger

"If children are taught how to play," said Dr. Bernard C. Clausen, speaking before the golden anniversary convention of the American Physical Education Association in Pittsburgh last month, "they will learn to despise the player who lets his temper get the best of him. And so in later life they will despise the kind of men who do not know how to work together to change the world for the better."

"Those who teach children how to play must help young people form a mental habit of diverting their anger into co-operative action with others for the correction of the cause of their indignation. In later life that action would be a social reform."

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This Captaining Business

[Continued from page 20]

The captain must be popular. He must have the confidence of his team. He must be one of them, and boys do not like a squealer, no matter how well justified the squealing is. These are the captain's responsibilities and he must work them out himself.

On the practice field I require of the captain the following things:

1. To be the first man dressed and on the field.
2. To be the first man to respond to any call from the coach.
3. To be constantly cheerful and enthusiastic, no matter how hard the workout has been, or how tired he is.
4. To be encouraging to the players. If the coach's tongue has been particularly burning, the captain must apply the salve.
5. To be self-effacing.

The Game

Once the referee's whistle puts the ball into play the captain's authority becomes absolute. Again he leads and encourages, rather than drives, but no team member is permitted to dispute his judgment at that time.

If it so happens that the captain is quarterback, he runs the team both offensively and defensively. If not, he enforces the authority of the quarterback on offense and takes complete charge of defensive maneuvers. The squad is given to understand that he may check signals at any time, but he is definitely instructed to do so only in one instance: that is when the quarterback fails to punt when, in the judgment of the captain, a punt is indicated. I do this on the assumption that the proposed punt is a defensive maneuver. If, however, the quarterback wishes to quick kick, or to punt for offensive reasons, the captain does not interfere.

The captain must be thoroughly grounded in the theory of defensive play. Most teams employ three and sometimes four defensive formations during a single game. He must know when the defense should be changed, and be prepared to change it without instructions from the bench. Many football teams are weakened by the necessity of making a substitution to convey instructions that should have been a part of the captain's stock of information.

Usually our captains do as follows:

1. Use a six-two-two-one outside their 20-yard line on the first two downs unless more than seven yards have been made on the first down.
2. Go into a diamond or a block on the second or third down when less than three yards are needed for a first down. The captain's judgment as to whether a kick is likely governs his choice. This is determined by the opponent's formations and by the field position of the ball.
3. Always go into a special kick receiving formation on fourth down when ball is outside of own thirty-five yard line.
4. Always go into goal-line defense when ball is inside own six-yard line.
5. Use of special defense in specific situations against certain teams. These defenses are always worked out in practice, and the captain has definite instructions for their use.

In addition the captain has the following responsibilities:

1. The decision to kick, receive or select a goal following the toss. Here he is instructed. The instructions are determined by consideration of the following factors: (a) The direction of the wind; (b) The offensive ability of the opponent; (c) The ability of own kicker; (d) The ability of opponent's kicker.
2. The decision to kick or receive after being scored upon. Whenever possible my captains elect to kick. We vary this only when behind late in the fourth quarter and possession of the ball is essential, or when our opponent's kicker is extremely weak.
3. The acceptance or declining of a penalty. Errors in judgment here may often cost a victory. The captain should base his judgment on relative value of down and yardage to the offensive team. Some decisions are obvious. An offside penalty, for example, which on second down would give the captain's team a first down not otherwise gained, could not be mistaken; but there are literally a thousand others not nearly so obvious to which some formula must be applied. A captain, whether on offense or defense, must decide which means the most to the offensive team, the down or the yardage, and make the choice accordingly. I invariably ask them to justify their choice after the game.
4. How to put the ball in play following a fair catch. This election is largely governed by the field position of the ball. If it is in a kicking position obviously we kick, if not, or if possession of the ball is made essential by the score and the lateness of the game, it goes into play from scrimmage.

The captain's relationship to the officials during the course of the game is important. The captain must remember that as leader and represen-



tative of his team he must be a gentleman. He must never lose his head, or permit himself to grow abusive. His tone and address must always be courteous. Moreover, the rest of the team should understand that the captain, and he alone, is the spokesman.

During the game the captain should be constantly on the lookout for injuries, or failing efficiency which have escaped the attention of the bench. A good player will often attempt to conceal an injury that is crippling his play, and may even succeed to the extent that the coach does not notice it. However, the captain must know from play to play the condition of each of his players. He should have the authority to ask for a substitute when, in accordance with his judgment, a substitute is needed.

Inasmuch as offensive and defensive strategy is often vitally connected with the time element of the game the captain should always know, at least approximately, how much time remains for play in every quarter.

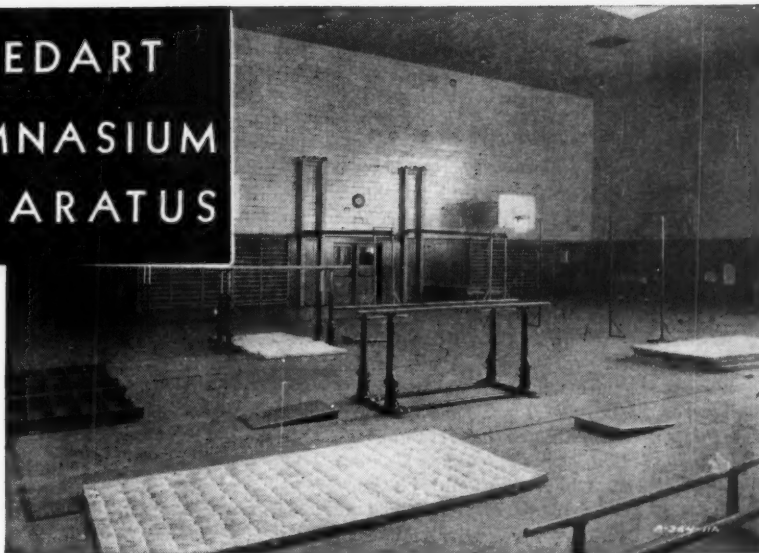
Captains should capitalize on the time-out periods, not only those which have been called for by either team, but those which automatically occur between quarters and after a touch-down. At these times the captain should see that the team is together and has an understanding of what the tactical situation calls for; if his team is kicking-off or receiving, every man on the team must be in on the knowledge of anything special that is to be attempted.

Lastly the captain should by example and encouragement attempt to keep the entire team working smoothly and at top speed. If the halfback misses a tackle it is not the captain's job to call him down. He should encourage him to do better on his next effort, and if the guard pulling out, comes slowly and jams the play the captain should not complain, rather he should sympathize with the offender for his hard luck. Only in one circumstance are my captains instructed to be severe. That is toward the man who talks in the huddle. All offenders are to be warned once, and upon their second break the captain asks for a substitute.

Our captains are asked to do their utmost to live up to the Fenger Captain's Code:

1. The team comes first.
2. To set an example not only as a football player but as a school citizen that all can follow.
3. To be ever alert for opportunities to better the team.
4. To be in all instances a sportsman and a gentleman.

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New Books on the Sportshelf

To the Editor of *Scholastic Coach*:

I notice on page 29 of the March issue of *Scholastic Coach* that you have reviews of my books *Athletics of Today*, *Athletics of Today for Women*, and *Success in Athletics*, all of which, I believe, are now out of print.

I am therefore asking my publishers, Messrs. J. F. Shaw & Co., Ltd., of London, to send you copies of my much more up-to-date works, *Athletic Training for Men and Boys*, *Exercises for Athletes*, *Girl Athletes in Action*, *Athletes in Action*, and *The Games Masters Hand Book*, which I should be very glad to have reviewed in your excellent publication.

Over here, we are all intensely interested in Professor Cureton's series of articles,* and very much hope that he will deal with the pole vault, certainly, and the long jump if possible.

F. A. M. WEBSTER
Biddenham, England, April 1, 1935.

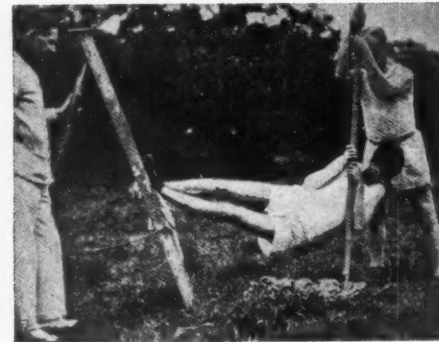
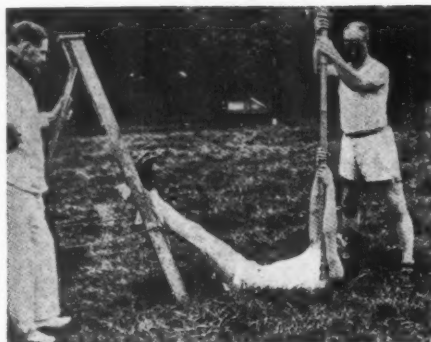
EXERCISES FOR ATHLETES. By F. A. M. Webster and J. A. Heys, with foreword by R. Tait McKenzie. Pp. 248, illustrated—photographs. London: John F. Shaw & Co. 7s. 6d.

This is the only book ever published dealing exclusively with the subject of what an athlete should do in the way of bending, stretching and back-yard suppling to condition himself for the full performance of the event. What is back-yard suppling? It is exercise which can be done at home with the aid of a step-ladder, a few chairs or simply nothing at all except a purposeful program and muscles that need suppling. This book is the purposeful program. It is in three parts: Part I contains chapters on The Human Body, Importance to Athletes of Exercise, and Fundamentals to Consider and Dangers to Avoid; Part II is on General Exercise; Part III gives Exercises for Particular Events, with a chapter on exercises for each of the following—runners, hurdlers, high jumpers, pole vaulters, long jumpers, shot putters, hammer throwers, javelin throwers and discus throwers. There is an exceptionally fine foreword by Dr. R. Tait McKenzie of the University of Pennsylvania. The book abounds in instructional pictures, some of which strike this 102% American in his funny-bone, figuratively and literally. That is to say, we tried some of the suppling exercises on the kitchen floor the other day, and it is only because of our marvelous recuperative powers

*The Cureton articles are: "Mechanics of the Track Racing Start," Jan. 1935, *Scholastic Coach*; "Mechanics of Track Running," Feb. 1935; "Mechanics of the Shot Put," Mar. 1935; "Mechanics of the High Jump," April 1935; "Mechanics of the Broad Jump," this issue.



Hurdling exercise for hip stretching. Pictures from "Exercises for Athletes" by F. A. M. Webster.



Exercise for developing lifting power and pull-up for the pole vault.

that we are able now to express regret at not having read in advance the paragraphs on "Dangers to Avoid" in Capt. Webster's exciting book. Indeed, it is all of that for the athletic devout.

J.L.
ATHLETIC TRAINING FOR MEN AND BOYS. By F. A. M. Webster and J. A. Heys. Pp. 208, illustrated—photographs, tables. London: John F. Shaw & Co. 5s.

This book, the companion volume to *Exercises for Athletes*, takes up each event on the usual track and field program and outlines a training program for it. Tables, showing the recommended practice day by day over periods of weeks and months, together with tables of efforts, are the features of the book. There are separate tables for boys and men in the running events. American coaches may disagree with parts of the authors' recommended program of training, but this is not likely to interfere with their admiration of a work which has much to contribute to specialized training methods. The volume contains 113 action photographs.

ATHLETES IN ACTION. By F. A. M. Webster. Pp. 304, illustrated—photographs. London: John F. Shaw & Co. 6s.

For the American coach the most interesting part of this volume would be the photographic studies (some from moving-picture film) of stride and style. Otherwise, it has little that cannot be found in a number of Amer-

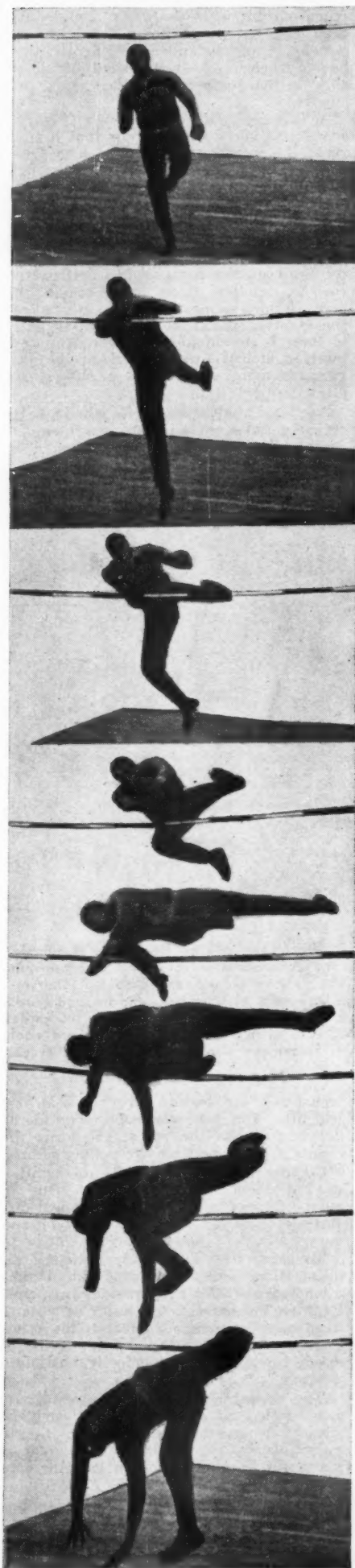
ican books on track and field technique.

GIRL ATHLETES IN ACTION. By F. A. M. Webster. Pp. 208, illustrated—photographs. London: John F. Shaw & Co. 5s.

Dedicated to Capt. Webster's daughters, Joan and Peggy, this book serves the same purpose for girls as *Athletes in Action* serves for boys. Though it assumes that the reader is interested in girls' athletic development toward championships (a thought which brings fire to the eyes of most leaders in women's physical education), the book has real value as one of the few, if not the only one in English which analyzes the form, and presents satisfactory action pictures of expert women athletes. A rear view of Babe Didrickson high-jumping is one of the moving picture sequences presented. You will recall that The Babe was disqualified from the 1932 Olympic high jump because she went over the bar head first, a method which has become legal since that time.

THE GAMES MASTERS HAND BOOK. By F. A. M. Webster. Pp. 192, illustrated—photographs. London: John F. Shaw & Co. 5s.

This is part of Capt. Webster's effort toward spreading the American system of physical education and coaching through the schools of England. Capt. Webster does not conceal his admiration for the American way,



but whether he is going to see the day when England adopts our conception of the place of the coach in the sporting and social scene, is a matter of considerable doubt. The games master, to whom this book is addressed, is the classroom instructor who, altogether as a side line, supervises and coaches the boys in their sports. To call him "coach" in England is to insult him, for the professional coach in England is somewhat low in the social scale, and is not even to be seen eating at the same table with those whom he may be coaching. As Capt. Webster puts it in his introduction: "The reason we do not have first-class professional coaches in various branches of sport in this country is because we will not pay the salaries demanded by the right type of man, nor are willing to recognize his proper social status." But it is Capt. Webster's after-thought which gives you a glimpse into how he really feels about it: "We shall come to it in time, there is no doubt about that."

But will it be cricket, Captain?

To be reviewed later

The following books were received too late for review in this issue, and will be reviewed in the next issue, September:

THE CURRICULUM IN SPORTS (Physical Education). By Seward C. Staley. Philadelphia: W. B. Saunders, 1935. \$2.50.

SOCIAL GAMES FOR RECREATION. By Bernard S. Mason and Elmer D. Mitchell. New York: A. S. Barnes & Co. \$2.50.

ELEMENTARY HUMAN ANATOMY. By Katharine Sibley. New York: A. S. Barnes & Co. \$4.50.

SWIMMING ANALYZED. By Gertrude Goss. New York: A. S. Barnes & Co. \$2.

TEAM SPORTS FOR WOMEN. By Alice W. Frymir and Marjorie Hillas. New York: A. S. Barnes & Co. \$3.

DEMONSTRATION HANDBOOK: OLYMPIA THROUGH THE AGES. By Harriet F. Fitchpatrick and Florence M. Chilson. New York: A. S. Barnes & Co. \$1.50.

High Jump by Cornelius Johnson

One of the top-flight high jumpers of the day who is likely at any time to nip the world's record of 6 ft. 9 $\frac{1}{8}$ in. (Walter Marty) is another Californian—Cornelius Johnson of Los Angeles. Johnson's best competitive jump is 6 ft. 8 $\frac{5}{8}$ in. (1934 national A.A.U. outdoor championships). Like most high-jumpers, he has an "off the record" performance better than his best in competition. In Los Angeles this winter he cleared 6 ft. 10 $\frac{1}{4}$ in.

Johnson is a pure western roller. He starts his run from eight to ten yards from the bar, at a 50-degree angle from the right. He uses two marks to serve as guides, and about these he is exceedingly meticulous: one is three yards in front of the bar and the other is five yards from the first.

These moving pictures by Owen Reed were taken on a cold day out of doors, with the bar set at 6 ft. 3 in.



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Japanese, American Swimming Strokes

[Continued from page 7]

haps unwittingly, an abnormally fast recovery.

I think it may be granted without hesitation that, as a group, they recovered more swiftly than their American rivals. And it can be shown that their quicker recovery was for them perfectly normal and incidental, not planned and purposeful.

To this end it is necessary to start by referring to the universally recognized fact that in crawl swimming the arms impart a maximum of continuous forward impetus when their action is so spaced that each will commence its drive, or pull, just before the other has completed its own propelling motion.

A moment's reflection will make plain that inasmuch as the driving arm cannot push through water as quickly as the recovering arm can move through air, the wanted spacing can be gained only by making the latter wait somewhere for the former.

This equalizing process may be accomplished in three ways: first, by turning off power before the driving arm has completed its submerged backward sweep; second, by retarding the forward, above water thrust; third, by pausing at or after the entry.

If the entire recovery is performed rapidly the action will be unbalanced and ineffective. The brief duration of the forward lunge will cause the arms to reach the point of entry at very short intervals. Inevitably they will be as close together at the end of the pull. Then the shoulders will slump and burrow, the arms will be out of water simultaneously, propulsion will not be continuous.

Above all, the arms will have no chance to rest between driving efforts, and everyone will realize that any stroke which permits no recuperating periods cannot be held effectively for any length of time.

American coaches believe best results are attained by ending the pull energetically; bending the arm smartly as it emerges from the water; relaxing fully while it glides slowly forward; starting another drive so soon as it touches the water in front.

Though part of this recovery is swift—the sharp folding of the arm, executed virtually as a continuation of the drive—the swimmer is able to rest the muscles during the limp forward movement.

We know from observation, confirmed by Takaishi's sayso, that the Japanese apply a certain amount of power immediately upon contacting the water, and complete the drive vigorously. How, then, could they manage to balance the action, if their recovery were as fast as painted?

It should be borne in mind that, other things equal, a short arm will perform the crawl drive in less time than a long arm; a strong arm in less time than one not so powerful; also that supple muscles can work faster than muscles less limber without experiencing greater fatigue.

The Nippon swimmers as Los Angeles not only were considerably smaller men than the American contenders, their arms shorter accordingly, but admittedly they were stronger proportionately and more supple.

So it readily will be seen their recovery, synchronizing with the drive, could have been faster, without being the least abnormal. It may be added, pertinently, that among themselves they varied considerably, in the number of strokes taken per minute.

A favorite claim of those who favor a completely speedy recovery is that it prevents the weight of the lifted arm from bearing down on the body long enough to sink it to a lower level and reduces muscular effort also.

When applied to the American crawl such a claim is totally unwarranted. Due to the vigorous finish of the pull, the snappy bend of the arm as it emerges, the forward motion takes place while the body is fully supported by the most effective part of the drive of the other arm, so there is no sinking whatever. And certainly a violent forward jerk of the arm requires more effort than a slower, relaxed motion.

All in all, advocates of a wholly swift recovery have not much to stand on. Of course, the action must be adjusted to individual characteristics. As pointed out, a supple swimmer may profitably resort



Charles D. Flachmann of the University of Illinois, receiving the congratulations of David L. Livingston of Yale, who finished second, and Ogden R. Dalrymple of the University of Michigan, who finished third, following the Illinois sprinter's victory in the 100 yards at the N.C.A.A. championships in the Harvard pool last month. Flachmann also won the 50 yards event.

to a faster stroke, and recovery, than one less lithe. But none can hope to do his or her best unless the recovery affords the chance to rest between propelling efforts.

Coming now to Takaishi's dissertation on the crawl, we find him referring to what he conceives to be three typical differences between the Nippon style and ours.

Touching first upon body poise, he remarks that, while Americans aim to take advantage of the hydroplaning principle by traveling through the water at a slant, head slightly higher than feet, his countrymen maintain it is more conducive to speed to advance in "perfectly horizontal position."

The thought occurs that Takaishi may have failed to express exactly what he meant in an effort to emphasize the ill consequences of assuming too great a slant, for he goes at length into the subject.

At Los Angeles the Nippon mermen swam with part of head always in sight above water, with feet almost wholly submerged, which hardly can be termed "per-

fectly horizontal position." A line drawn from the center of the head to the meeting point of the alternately thrashing feet will show a distinct incline, head the higher.

Actually the Japanese, barring rare exceptions, conformed with the American idea that the eyebrows should be approximately at water level, when the head is straight; the feet never rise above water beyond the heels.

In taking up the arm drive Takaishi lays great stress on what he calls a unique feature of the home crawl. In his country, he declares, the arms are not used for traction during the first part of the pull, but solely to support the shoulders by means of "gentle" downward pressure, the culmination of the propelling effort occurring during the "last instants" of the backward sweep.

As against this purely Japanese method of distributing the power, he asserts, Americans and Europeans endeavor to gain a combination of lift and propulsion by exerting excessive pressure in the early stages of the drive, thereby wasting energy which would be far more profitably expended at the other end of the pull.

It is quite true that our experts believe the arms can be made to propel, as well as support the body immediately upon entering the water. If the forearms dip at the proper pitch, hands lower than elbows, they will automatically impel the body upward and ahead the moment power is applied. But that does not mean a start forceful enough to impair the effectiveness of the after drive is necessary or recommended.

Takaishi may have been misled by the swimming of some of our Olympians who, contrary to expert dictates, hit the surface rather violently in entering. But American thought clearly is defined in an article published as far back as 1922, before Japan had gained a place on the swimming map. Says the author:

"The arms should apply firm downward pressure immediately upon dipping, then sweep back under the body with a continuous, strong pull, exerting their greatest effort as the hands approach and pass the midway mark to the thighs, where they find the best point of leverage for a forward push."

And this, by the way, might be cited as a good description of the Japanese drive. Unmistakably the Nippon swimmers at Los Angeles started their major effort before reaching, not after passing the midway mark, as could be inferred by Takaishi's "last instants" expression.

That for the launching of the drive Japanese coaches prescribe "gentle" and the American "firm" downward pressure may be regarded as a distinction without a difference, for both sides agree the pressure must be sufficient to support the shoulders, whether or not propulsion is sought also.

The third of Takaishi's claims is that, although Americans aim to facilitate hydroplaning by rolling no more than essential to raise the mouth above water for inhaling, the Japanese think a pronounced roll to both sides preferable, as it places the arms in better position for propelling.

Nippin's spokesman does not explain how or why the pronounced double roll is helpful and, frankly, we are puzzled, as the amount of driving momentum contributed by the arms is determined by their position relative to the body, and said position obviously can be assumed regardless of the lateral sway of the body. It is to be remembered, moreover, that the greater the roll, the greater shoulder immersion and consequent resistance to the water.

Whatever the Japanese theory, it was matter of comment at Los Angeles that

the little men from the East rolled less than the American swimmers, so there is no need to go further into the question.

Takaishi's exposition of the action of the legs is couched in technical parlance, long and involved. As, however, he points to no dissimilarity between Japanese and American ideas on the kick, we may take for granted that there is none.

In the opinion of this writer the outstanding feature of the crawl swimming of the Japanese, a factor in their success, was admirable control of shoulders. Virtually all kept their shoulders steadily square throughout the recovery of the under arm; firmly at an angle (top shoulder a bit back of lower) during the entire recovery of the upper arm. By so doing they maintained perfect body balance, avoided the shoulder sinking caused by over-reaching, were able to fully utilize arm power from start to finish.

Quite a few of our own swimmers, instead, ignored this all-important teaching of the American school. They allowed the shoulders to follow the arms in recovery, losing equilibrium, over-reaching, dropping the elbows before the entry, squandering energy.

Which brings to mind the words of a famous European coach in commenting on what occurred at the last Olympic Games: "As I saw it," he said, "the Japanese used the American crawl, but they used it in better form than did the men representing the United States."

In weighing the significance of Nippon's triumph at Los Angeles we may pass over the 100 meters back stroke and 200 meters breast stroke with the mention that the Japanese entrants earned the three top awards in the former and reaped first and second laurels in the latter.

For our purpose need be considered solely the outcome of the free style events, in which the prone crawl is the universal medium of contenders.

At 100 meters free style two Nippon sprinters led home the field, but closely pressed by two Americans, and the best time chronicled in heats or final was 58 seconds, as against the American held long course world's record of 57.8 seconds.

At 400 meters the Japanese finished third and fourth, behind the American winner and a Freshman. At 1500 meters they touched first and second, but the victor missed world's time by 5.2 seconds.

The Orientals won easily the 800 meter relay for teams of four, yet the fastest time any one turned in for his allotted 200 meters was 2 minutes 14 seconds. The world's long course record for 220 yards, 2:13.6, was set by an American in a 110-yard pool and represents an approximate pace of 2:11 for 200 meters in a 50-meter Olympic pool.

So our vanquishers not only failed to equal a single world's record in the individual free style swims, but comparatively they displayed greater superiority in breast and back stroke than in crawl swimming.

We may be reminded that the Japanese have done some world's record breaking since. But so have our watermen. In fact, a glance at the table of international marks last published will reveal that Uncle Sam's natators hold thirteen of seventeen individual free style standards listed, while two were set by a Swede after spending a couple of seasons in the United States, leaving just two in Japan's possession.

Some will argue that group performances, not individual feats, establish the rating of a stroke. But they will have to summon marvels of eloquence to convince anyone of the inferiority of a stroke responsible for the creation of thirteen at least, possibly fifteen of seventeen existing world's records.

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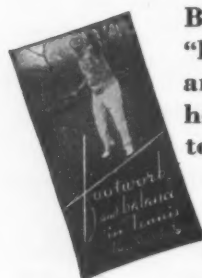
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MAKE THE VICTOR...

How, then, account for the conclusive defeat suffered by our men swimmers in 1932?

Noted home and foreign authorities have expressed the belief it was due chiefly to the greater opportunities afforded Japanese boys to build up physically and gain swimming skill in childhood, later to prepare for international competition. The reader may agree after considering general conditions in the two countries.

The Japanese youngster gets a flying start on the American lad. From early age he is put through very thorough courses of exercise, conducted as a matter of national policy. If natatorially inclined he is at once encouraged to go in for middle distance swimming, the constructive work which most effectively develops the swimming muscles and best strengthens the constitution, producing vigor and stamina. As a result he often is able safely to begin racing at 800 and 1500 meters before entering his teens.

With us the physical training of children is not nearly so widespread, nor anything like so thorough. And the boy who takes up competitive swimming practically is forced to specialize in the sprints. Not only do many of our educators still cling to the old and fountless belief that middle distance swimming is injurious to youngsters, but most of the scholastic racing is done at 25, 50 and 100 yards. Even the high school program calls for no event longer than 220 yards.

The Japanese youth, moreover, indulges very little, if at all, in the social diversions so popular with his American brother. There is not in the land of Nippon the same pursuit of light and effortless pastime and entertainment. So when the Japanese lad goes in for athletics he takes them more seriously, has more time to devote to them, fewer outside interests to interfere with his training. Usually he does not drink or smoke, which helps.

Where sports are concerned, too, his sense of national honor, if one may so call

it, is the keener. As an Olympic prospect he will make greater sacrifices in the hope of qualifying to assist in upholding his country's prestige, work harder, submit more readily to strict discipline, give more unsparingly of his best.

Lastly, of paramount importance, directing effort is better organized in Japan, far more concerted, purposeful and effective. The Japanese Swimming Federation, in control of water sports, is a closely knit, active, prosperous body, run by competent and enterprising enthusiasts, who contribute without stint of their time and labor.

The federation has spent money lavishly to send coaches abroad in search for knowledge; successfully sponsored campaigns to bring about the construction of standard swimming pools; instituted yearly national congresses for the propagation of natatorial information.

But, in the United States, even if our training methods and our attitude are different (which is not to say that they are better or worse than those of the Japanese), we seem to be doing fairly well in the water, as witness the recent record-breaking performances at the N.C.A.A. and A.A.U. championships. Jack Medica, Jimmy Gilhula, Peter Fick, John Macionis, Charles Flachmann, Ralph Flanagan and others of our male swimmers, not to mention their sisters-in-water, are causing the headlines writers to gasp: "U.S. Swimming Comeback Unequaled in the Sport. Badly Beaten by Japan in 1932, America is Likely to Turn the Tables Next Year."

It is the firm belief of this writer that if the natatorial highbrows of Japan and the United States could engage in a frank exchange of views concerning the crawl they would find themselves in perfect agreement on fundamental principles and basic action.

However, the reader may be left to decide whether the submitted facts support or refute the claim that Japan has evolved a new and better crawl stroke.

Rules Altered

[Continued from page 19]

sible for the pushing and crowding. It is inevitable that there will be a considerable number of interpretations required in connection with this play and those who have been experiencing no trouble with the pivot-post set-up will probably regard this as an unnecessary limitation. Whenever the rule is violated it is considered a violation and the ball is awarded to the opponent out of bounds at the end at a point nearest the violation.

13. A slight change in wording will make it clear that a coach is not permitted to go on the court during a game unless requested to do so by the official. Last year the rules did not cover this point although it was generally understood that such a procedure was illegal.

14. The rule relative to disqualification for flagrant and unsportsmanlike conduct is to be strengthened. Disqualification for such fouls will be mandatory rather than discretionary.

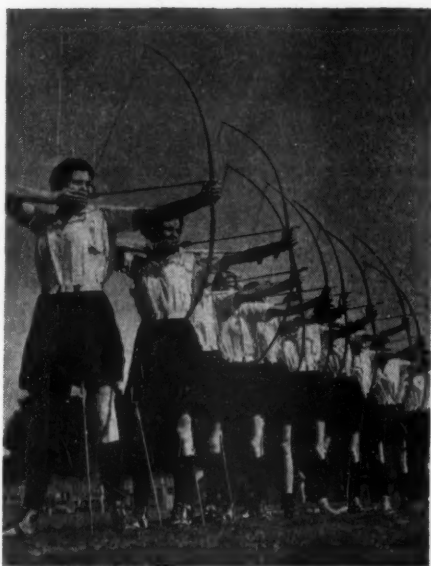
15. There is a slight change relative to the allowing of a basket which is made immediately after the whistle is blown for a foul committed against a player in the act of shooting. This change will give the official permission to allow a field goal which is made in such a situation even though the ball left the thrower's hands after the whistle blew. However, the try must have been made in the immediately continuing motion which was

in progress when the whistle sounded, and the official must decide whether the action was affected in any manner by the whistle. Technically the wording of such a rule is difficult. However, in practice it is probable that most of the imagined difficulties do not exist. In such situations it is nearly always possible for an official to determine whether the whistle had any effect on the play.

In addition to these changes several other matters were thoroughly discussed. One of these concerns the intentional foul that is often made in order to prevent a try by a player who has secured a position between his guard and his goal. While no specific rule change was authorized there was rather general sentiment that this play should be discouraged and there was a general feeling that it might be taken care of through the section on unsportsmanlike tactics. Various groups may choose to extend this section so that it would give the official authority to award an additional free throw for unsportsmanlike conduct in case such a foul is committed.

There was also discussion which indicated the belief that except for the expense of changing equipment the moving of the baskets six feet inside the end lines would be desirable. Such a move would allow considerable chance for additional offensive tactics since it would allow play to come into the basket from all directions.

*New York Times, April 8, 1935.



Wide World

ABOVE—THE GIRLS' ARCHERY CLASS AT THE UNIVERSITY OF SOUTHERN CALIFORNIA ON THE PHOTOGRAPHER'S FIRING LINE: Good form on the draw exemplified by U.S.C. archers who rank among the best in intercollegiate competition.

RIGHT—THE HOLDER OF MOST OF THE AMERICAN BACKSTROKE RECORDS OVER THE 25-YARD COURSE, and CLAIMANT OF THE WORLD'S RECORDS: Albert Vandeweghe of the Hun School, who set these marks last year while a student of Paterson, N. J., High School, finishing the 100-yard race in the recent interscholastic meet in Philadelphia in the record time of 60.4 seconds, breaking his previous record by .6 second.



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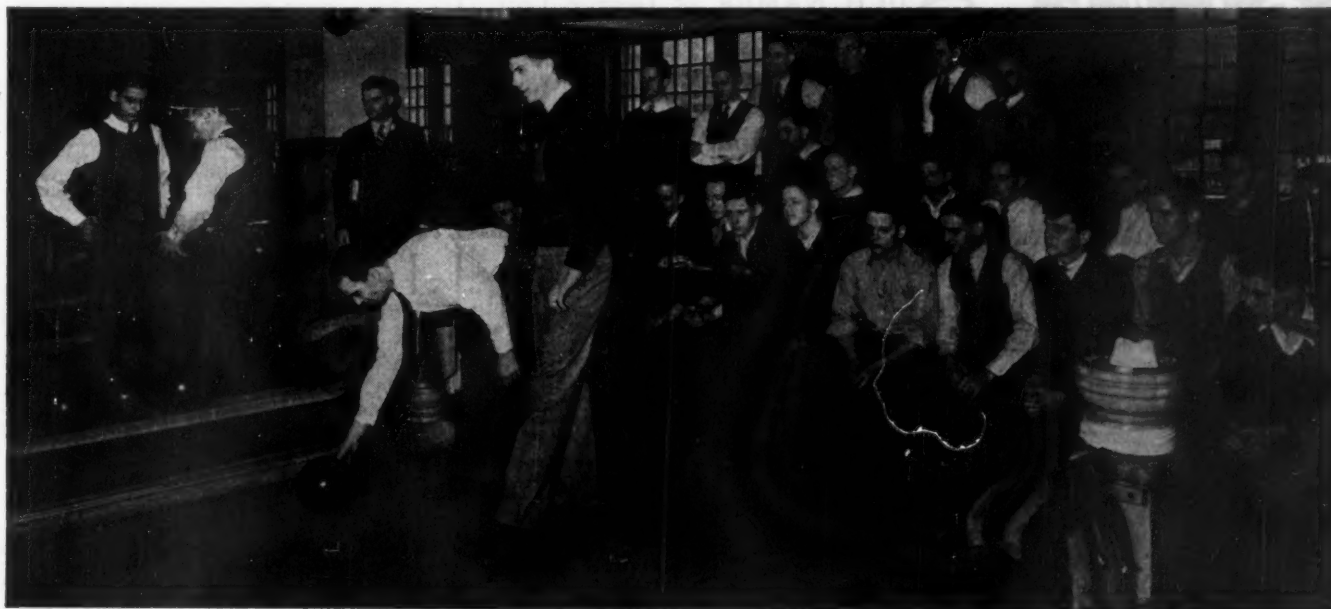
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ABOVE—THE RIGHT AND THE WRONG WAYS TO TURN THE BASE: Max Carey (left) demonstrating the proper approach and turn of the base when the base-runner sees that the play at that corner will not be close and intends to continue toward the next base. The runner should follow the straight line to within about twenty feet of the base, where he breaks into the arc that cuts the inside corner of the sack.

BELOW—A GAME FOR A LIFETIME TAKEN UP BY HIGH SCHOOL STUDENTS: One of four groups of high school boys of Louisville, Ky., receiving instruction in the game which has the endorsement of T. C. Hesmer, director of physical education of Louisville High School.



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Notes on state basketball tourneys

[Continued from page 11]

in tournament play especially to our team as we had to depend upon the five regulars until a good lead was established."

Eddie Chinske, coach of the Custer team of Miles City, A winners, explains the ramifications of the zone defense which did so well by him and his boys:

"Our defense consisted of a shifting zone. We would shift in order to block the path of the ball at all times. Each man would back up another if a man was pulled out of position. For instance, the ball coming down the left side of the floor; the right forward would go to meet the ball, the left forward drops back and covers the hole, the center backs up the right forward, the right guard is back of the center, the left guard covers the territory immediately surrounding the basket. If the right guard should be pulled out to the corner then the center would immediately drop back and take his place, the guard then playing as a center. If the center could not take his place then the left guard would move over and cover the territory left vacant by the right guard in order to keep a man from breaking in for a sucker shot. This plan is followed by all the men, if one is pulled out of position, then another backs him up.

"During the championship game we used this type of defense. During the tournament we used the man-to-man defense once, the only time we used it during the entire season.

"We have used this defense for the past five years, and during that time we have won two state championships and two conference championships."

St. Francis Mission of South Dakota, National Catholic semi-finalists, was not the only all-Indian team in championship play. Lodge Grass, one of the four teams in the

Montana state final round-robin, was all-Indian, and a mighty fine outfit. The phenomenal shooting of their center, Old Crow, was the outstanding individual performance of the tournament.

Chanute, Kansas A winners, was the only undefeated Class A school in Kansas for the season. Chanute won 23 games; score 974 points to opponents' 485. Coach J. Dale Skelton says this about the Chanute system:

"Throughout the season and the tournament we employed the fast break on offense. We stressed the fast break more in the tournament than we did during the regular season. Our team was one of the smaller teams in the tournament, but each of the boys was fairly fast and the fast breaking attack proved successful for us. When the opponents defense had an opportunity to become set we employed the orthodox single pivot formation. We used only one set play, a very simple one, during the tournament. It worked a number of times for baskets during the tournament. It consisted of a guard passing in to the pivot man and he then passed to a forward, who ditched his guard by a quick cut for the basket. We employed no blocks or screens but depended on good passing and speed entirely.

"On defense we employed an assigned man-to-man defense. Occasionally we checked or swapped opponents, but not often. Our opponents got very few close in shots or setups, most of their shots coming from as far away as the free throw line or farther.

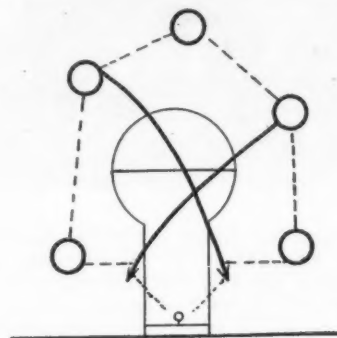
"Many of the critics predicted our team would not be able to maintain their fast breaking attack employed during the first game. It developed that our team was probably the best conditioned team in the tournament and "ran down" each of our opponents and finished the tournament comparatively fresh."

DENTON, the Texas winners out of an original field of 1,610 teams (a sort of national championship in itself) used a circular offense and took their time about it; so much so that the champs were taken for a ride by an Austin sports writer (whose name we don't have or we would

mention it) because Denton played a cool, deliberate, unemotional game, and didn't play the spectacular fire-department ball that makes sports writers go into rhapsodies.

"My answer to such criticism," Coach Dan McAlister informs us, "is that we teach our boys to use their heads as well as their hands and feet." So it's chess your trying to make this game into, eh Dan? You watch yourself or those big bad sports writers will Hearst you out of town.

Coach McAlister has diagrammed the formation of his circular offense (see below) and commented on it as follows:



"From this formation we used criss-cross, screen and reverse plays. We did not use the conventional pivot play. Any man on our team might, and did, break in to try to score, on the above offense. We used a one-hand shot, and all our boys could shoot with either hand.

"In the state meet in the first two games we played a slow, deliberate game, in order to conserve energy. In fact we played only fast enough to win our games. As a result we came through to the third and final game, with Lamesa, in good condition, and our boys opened up and played their fastest game then. They had plenty of pep and energy when it was over.

"On our offensive formation every man has a definite job to do every time one of them drives in to try to score. We made a good many points in the state meet on follow-up shots. I believe the reason for it was that each player had a definite area to cover on each play. We were there when the ball came off the board.

"Lamesa, the team that played us in the finals, used a man for man defense against us. They had a wonderful team but appeared tired in the final game, probably because of having played too fast a game in their semi-final."

IN the past five years Astoria High, Oregon 1935 champions, has won the state title three times and was runnerup the other two times. Their coach, known as "Honest John" Warren, will be with them no longer; at the conclusion of the tournament he was appointed coach of freshman athletics at the University of Oregon.

Pole Vault Ceiling Raised

Bill Graber bettered his own world's record in the pole vault on April 27 at Santa Barbara, Calif., when he cleared the bar at 14 ft. 5½ in. His former mark, the accepted world's record, was 14 ft. 4¾ in.

Jesse Owens Jumps 26 ft. 1¾ in.

A new American record for the running broad jump was set by Jesse Owens, Ohio State sprinter and jumper, at the Drake Relays, April 26, when he made a leap of 26 ft. 1¾ in., just ¾ inch from the world's record held by Chuhei Nambu of Japan.

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ROCKY MOUNTAIN TEACHER'S AGENCY

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WM. RUFFER, PH.D., MGR.

A. P. E. A. Test

[Continued from Page 25]

4. Execute sailor dive in good form.
5. Demonstrate three of the following strokes: breast, back, side, crawl or trudgeon..... 50 feet each

Junior Red Cross Life Saving test accepted in place of these standards.

Note: Three events must be covered in each group. In Group II, one event must be a run, and in Group IV, the 180 yard swim.

JUNIOR DIVISION

(Ages 14 and 15)

Established for 50 percent to pass

Group I—Game Skills

1. Football goal-place kick 2 out of 5 at 60 ft.
2. Baseball target throw... 3 out of 6 at 30 ft.
3. Basketball goal shooting 7 in 30 seconds
4. Tennis serve 3 out of 5 trials
5. Catching place-kicked football 4 out of 5 trials

Group II—Track and Field

1. 100-yard dash 13 seconds
2. Running broad jump... 12 feet 10 inches
3. Running high jump.... 4 feet
4. Baseball throw 175 feet
5. 220-yard run 32 seconds

Group III—Gymnastics

1. Rope climb 16 feet (hands and feet) 8 seconds
2. Hand stand 4 seconds
3. Running vaults over bar or fence 4 feet 6 inches
4. Hanging between ropes, turn backward, and return.
5. Forward hand spring.

Group IV—Water Sports

1. Swim 200 yards
2. Recover 5-pound object, by surface dives, in 8 feet of water 3 out of 5 trials
3. Swim 40 yards free style 35 seconds
4. Execute front jack dive in good form.
5. Demonstrate four of the following strokes:

breast, back, side, crawl or trudgeon 50 feet each

Junior Red Cross Life Saving test accepted in place of these standards.

Note: Three events must be covered in each group. In Group II, one event must be a run and in Group IV, the 200-yard swim.

SENIOR DIVISION

(Ages 16, 17, 18, and 19)

Established for 40 percent to pass

Group I—Game Skills

Attended regular practice and played in at least two full games on any one of the following teams: intramural, class, or school football, baseball, basketball, speedball, soccer, hockey, tennis team, or runner up in tournament or other teams.

Group II—Track and Field

1. 100-yard dash 11 3/5 seconds
2. Running broad jump... 15 feet 6 inches
3. Running, high jump.... 4 feet 6 inches
4. 8-pound shot 35 feet
5. 220-yard dash 28 seconds

Group III—Gymnastics

1. Rope climb, 12 feet (hand over hand) 18 feet
2. Backward roll to hand stand or upstart.
3. Standing bar vault..... 5 feet
4. Circling bar backward from hang to front support.
5. Handspring backward or somersault front or back.

Group IV—Water Sports

1. Swim 440 yards
2. Recover 10-pound object, by surface dives, in 8 to 10 feet of water 5 out of 5 trials
3. Swim 100 yards free style 1 min. 25 sec.
4. Execute front, back, and front jack dives in good form.
5. Tread water 1 minute

Senior Red Cross Life Saving test accepted in place of these standards.

Note: Three events must be covered in each group. In Group II, one event must be a run, and in Group IV, the 440-yard swim.

Texas H. S. Football Coaches Association

The Texas High School Football Coaches Association, organized in 1930, continues to exert a strong influence on high school football in Texas. Through sixty district chairmen, representing the sixty Class A, B and C districts into which the state is divided by the Texas Interscholastic League, the Association headquarters maintain contact with its membership. The present officers of the association are: P. E. Shotwell of Breckenridge, president; W. E. Davis of Dallas Tech High School, first vice president; L. C. Wood of Cameran, second vice president; Standard Lambert of Temple, secretary-treasurer.

The Association holds its annual meet-

ing in the fall, in conjunction with the rules interpretation meeting of the Southwest Board of Football Officials. The football coaching school, sponsored every summer by the Association, affords the members still further opportunity to get to know one another. The school is conducted on a non-profit basis, and is open to non-members as well as members. The former pay an additional \$2 to the members' tuition of \$10. Tad Wieman of Princeton, Ted Cox of Tulane and Ed Walker of Mississippi have been signed as instructors for the 1935 session, which will be held at Southern Methodist in Dallas, July 29-Aug. 3. Final plans for the school will be announced after the meeting this month of the Association's board of directors.

STANDARD LAMBERT
Secretary-treasurer
Texas H.S.F.C.A.

Temple, Texas.



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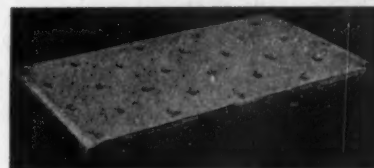
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NAME.....

POSITION..... SCHOOL.....

(Principal, coach, athletic director, physical director)

CITY..... STATE.....

Outfielders

[Continued from page 23]

third base and with less than two down, is a time when the three outfielders should play short enough to hold the runner on third on any caught fly or to throw him out at the plate if he attempts to score. Move in where you can field all the short flies and yet be able to go back to catch those within your throwing range of home plate. If a hit goes over your head, they will win. If you play back and cannot catch the short ones or cannot hold the man on third they will win. So play short until two are out.

HOW TO MAKE A DOUBLE OR TRIPLE OUT

A smart play of a short high fly that would drop in left field or left-center field just back of the infield, can be turned into a double or triple play if first and second are occupied and the fly is such that the runners must hold their bases because of the certainty of the fly being caught. The outfielder can follow the ball down with his hands and trap the ball just as it strikes the ground, then throw to third, thus retiring the man from second, and the third baseman may be able to retire the man from first. If the batter failed to run out his fly, the play may result in a triple put-out if there were none down at the start.

Basketball Coaches

[Continued from page 16]

appointed to take movies of all doubtful points. These will be edited by the National Rules Committee and a composite film distributed all over the country so that every coach and official can see just how plays should be called.

H. V. Porter, one of the high school members of the National Rules Committee, summarized the votes on the 1935 questionnaire, and exhibited movies showing rules interpretations.

The convention closed on the third day with the election of officers. Those elected were: President, Arthur C. Lonborg, Northwestern; First vice president, Dr. H. C. Carlson, Pittsburgh; Second vice president, E. A. Kelleher, Fordham; Third vice president and editor of the Association Bulletin, George R. Edwards, Missouri; Secretary-treasurer, William Chandler, Marquette.

499 Consecutive Throws

A new record for consecutive successful free throws was hung up by Harry "Bunny" Leavitt, assistant coach of the Central Y.M.C.A. in Chicago, when he caged 499 without a miss on April 6, at the 132nd Regiment Armory in Chicago. After missing the 500th shot, he continued to shoot 371 more consecutive successful throws before missing his second. There were no rests or intervals.

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